

Generic System Components of the Thiokol Ultrasonic **RSRM Case-to-Insulation Bondline Inspection System Final Test Report**

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Generic System Components of the Thiokol Ultrasonic RSRM Case-to-Insulation Bondline Inspection System Final Test Report

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ABSTRACT

Qualification testing of the Ultrasonic Redesigned Solid Rocket Motor Bondline Inspection Systems (URBIS) was conducted at the Thiokol Nondestructive Evaluation Test Facility M337A and at the Rotation Process Storage Facility at Kennedy Space Center. The test was performed on portions of the URBIS that are generic to redesigned solid rocket motor case-to-insulation bondline inspections. Testing began on 13 Feb 1989 and was completed on 26 May 1989.

The main purpose of the test was to verify that each URBIS performed to the manufacturer's specifications in the same manner and to make any procedural changes necessary for specific redesigned solid rocket motor inspections. All five URBISs passed every stage of the qualification test. Each URBIS has now been qualified for use on redesigned solid rocket motors, and verifying that each URBIS obtained and analyzed data in a similar fashion has eliminated concerns about variations in data between the five systems.

The following recommendations have been made as a result of this test: 1) Each URBIS should be located within a stable environment. 2) An electronic preventative maintenance program should be established for each URBIS. 3) When the URBIS is being utilized to perform transducer analysis, the URBIS equipment setting should match the equipment setting noted on the manufacturer-supplied transducer certification sheet. 4) Optimum scan velocities for each inspection technique (clevis, capture feature, pinhole and membrane) should be determined through further testing.



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ACRONYMS AND ABBREVIATIONS

analog-digital AD cathode-ray tube CRT direct current dc electromagnetic interference EMI gigahertz GHz kilohertz kHz MHz megahertz nondestructive evaluation NDE preventive maintenance PM radio frequency RF Rotation Process Storage Facility RPSF redesigned solid rocket motor RSRM ... test preparation sheet TPS Ultrasonic RSRM Bondline Inspection System URBIS ... volumetric inspection system VIP



INTRODUCTION

This report presents the procedures, performance, and results of the qualification tests for the portions of Combustion Engineering's AMDATA Intraspect/98 Data Acquisition and Imaging System that are generic to redesigned solid rocket motor (RSRM) case-to-insulation bondline inspections. The Intraspect/98 system will be referred to as the Thiokol Ultrasonic RSRM Bondline Inspection System (URBIS) (C77-0479). The four bondline inspections are applied to the capture feature, clevis, pinholes, and membrane. The purpose of the URBIS is to execute scan sequences, gather and analyze data, and archive the data. Ultrasonic inspections specific to the capture feature, clevis, pinholes, and membrane will be qualified in the future per their own tests.

The test focused only on the performance of URBIS components that were independent of specific RSRM inspections. The qualification of each URBIS began with documentation of the calibration and checkout of the major URBIS components by Combustion Engineering personnel prior to Thiokol's receiving the URBIS. A recalibration and checkout by Thiokol Electronic Maintenance personnel was performed just prior to the qualification test. The qualification functional checks were then performed on the system, ultrasonic, mechanical, and computer portions of the system.

Testing was conducted in accordance with CTP-0100, "Qualification Test Plan For The Generic System Components Of The MTI Ultrasonic RSRM Bondline Inspection System (URBIS)." The objectives and procedures of CTP-0100 were derived from AMDATA manuals and specifications (referenced in Section 7.0, Applicable Documents). Testing was performed to ensure that each URBIS performed to the manufacturer-specified requirements and to note any changes needed for specific RSRM applications. It is recommended that CTP-0100 and the AMDATA manuals and specifications be referred to for further explanation of URBIS components and test procedures.

Five complete URBIS systems were qualified: 1) Thiokol Nondestructive Evaluation (NDE) Lab Inspection System (S/N S-A51866), 2) Thiokol RSRM Insulated Level Inspection System (S/N S-A51868), 3 and 4) Thiokol Final Assembly Loaded Level Inspection System (S/Ns S-A51865 and S-A51869), and 5) KSC Loaded Level Inspection System (P/N 2U129431-001).

The prequalification recalibration and checkout was performed at the Thiokol Electronic Maintenance Facility M-71 and at the Kennedy Space Center (KSC) Rotation Process Storage Facility (RPSF). The qualification testing was conducted at the Thiokol NDE Test Facility M337A and at the RPSF. Testing began on 13 Feb 1989 and was completed on 26 May 1989.

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1.1 TEST ARTICLE DESCRIPTION

Test article configuration was controlled by applicable AMDATA drawings and CTP-0100. The URBIS (Amdata Intraspect/98 Data Acquisition and Imaging System) (Figures 1 through 3) consists of:

Hewlett Packard 9836CS computer, color monitor and hard disk printers

Amdata's volumetric inspection system (VIP) software

Remote data acquisition system (RDAS)

Motion or scan controller (SC5032)

Remote pulser-preamplifier (RPP5RT)

AMAPS scanner (Model 2090)

Remote receiver (RR4RT)

Topaz uninterruptable power supply (UPS)

Couplant supply system (Model 1010)

250-ft umbilical cable

Communication set

Membrane scanner

In addition to the URBIS components and associated test instrumentation (listed in Section 4.0), a 12- by 18-in. case/insulation sample was used for the electromagnetic interference (EMI) and later tests. Also, a Parker Contour Probe (Model DA-400) was used to impose extreme EMI levels on the data acquisition cables.



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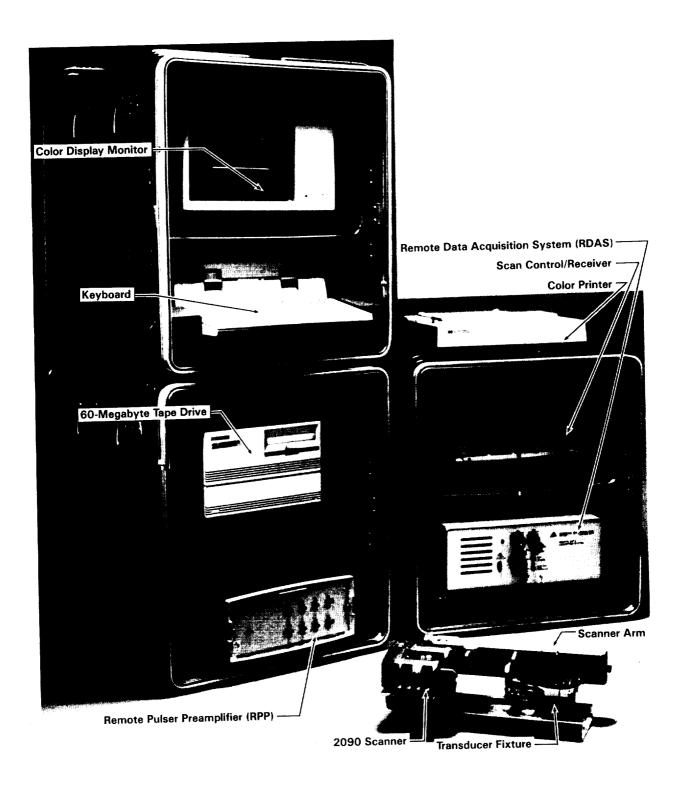


Figure 1. Ultrasonic RSRM Bondline Inspection System (URBIS)

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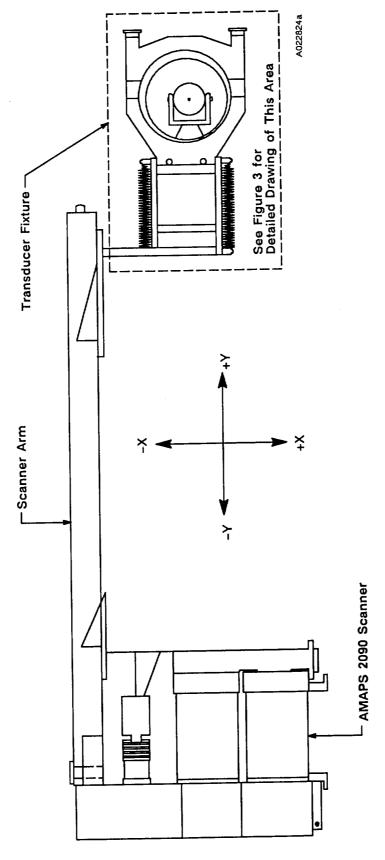


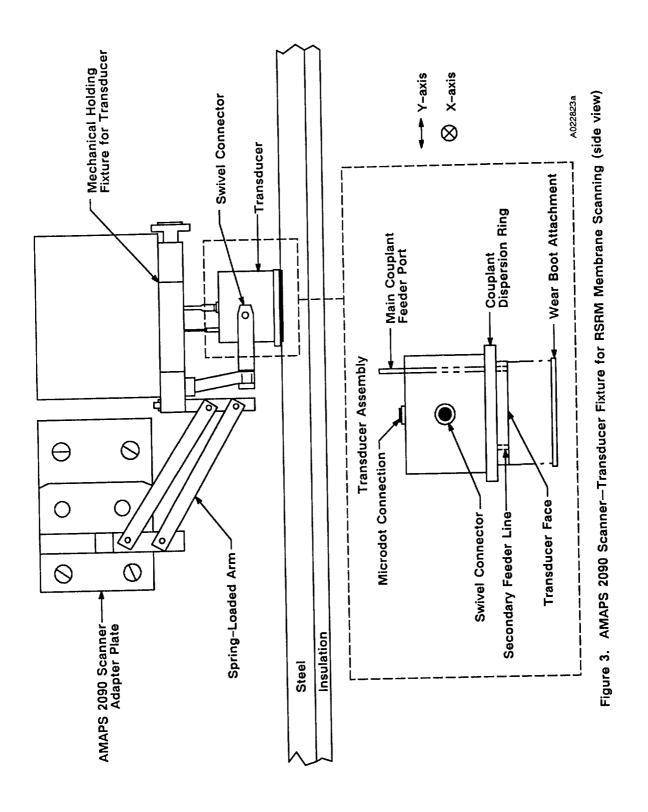
Figure 2. AMAPS 2090 Scanner Assembly (top view-not to scale)

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OBJECTIVES

The following test objectives were derived from AMDATA manuals and specifications referenced in Section 7.0, Applicable Documents.

- A. Verify that the system components perform as specified by the vendor.
- B. Verify that the band pass filters, generic transducer analysis software, and analog-digital (AD) converter are working properly as well as the shielding of the data acquisition cables against EMI.
- C. Verify that the Y-axis transducer positions accurately.
- D. Verify that the X-axis transducer positions accurately.
- E. Verify that the manufacturer-specified Y-axis scan velocity allows data to be digitized and displayed in both the peak detection and radio frequency (RF) modes.
- F. Verify that the manufacturer-specified X-axis scan velocity allows data to be digitized and displayed in both the peak detection and RF modes.
- G. Verify that, in the event of a power failure, the URBIS will provide the operator with enough time to shut down a scan and store all data that had been accumulated up to the point of the power failure.
- H. Verify cathode-ray tube (CRT) color scale accuracy and display clarity.
- I. Verify that the color scale presentation on the CRT is the same as the colors produced on the printer.
- J. Verify that data file transfers from the URBIS hard disk to the data tape cartridge and then back do not compromise the data. (This additional objective was added by nondestructive engineering after the completion of CTP-0100.)

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EXECUTIVE SUMMARY

3.1 SUMMARY

This section contains an executive summary of the key results from test data evaluation. Additional information and details can be found in Section 6, Results and Discussion.

Qualifying the generic components of the five URBISs consisted of two major efforts: 1) a prequalification electronic and mechanical maintenance/recalibration, and 2) a series of qualification tests to check out the electrical, mechanical, and software limitations of each system. Except where testing was unique to RSRM hardware, all testing was performed to baseline inspection procedures (per CTP-0100) from the manufacturer and vendor, Combustion Engineering.

Operating instructions from the manufacturer were for more simplified inspections than for the RSRM. Testing determined that these operating procedures required some alterations to allow for RSRM compatibility; the most significant change was to the scan velocity. The manufacturer recommends one scan velocity for all inspections, but it was determined that different scan velocities are necessary for each type of RSRM scan. A minimum scan velocity for all RSRM inspections was obtained during this test.

The main purpose of the test was to verify that each URBIS performed to the manufacturer's specifications in the same manner and to make any procedural changes necessary for specific RSRM inspections. Each URBIS passed every stage of the qualification test, and the results from all tests were very encouraging. Each URBIS has now been qualified for use on RSRMs, and verifying that each URBIS obtained and analyzed data in a similar fashion has eliminated concerns about variations in data between the five systems. This test also provided many insights into other areas of concern such as the URBIS working environment, preventative maintenance, and matching of equipment.

3.2 CONCLUSIONS

The following columns list the conclusions as they relate specifically to the objectives. Additional information to support each objective and conclusion can be found in Section 6.2, Test Description, Results, and Discussion.

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Objective

- A. Verify that the system components perform as specified by the manufacturer.
- B. Verify that the band pass filters, generic transducer analysis software, and AD converter are working properly, as well as the shielding of the data acquisition cables against EMI.

- C. Verify that the Y-axis transducer positions accurately.
- D. Verify that the X-axis transducer positions accurately.
- E. Verify that the manufacturer-specified Yaxis scan velocity allows data to be digitized and displayed in both the peak detection and RF modes.

Conclusion

Verified. Each URBIS passed the system diagnostic self-test, which verified that each component was properly configured and properly interfaced with all other components. Each URBIS also passed the system validation test, which verified that all parameters that could affect data interpretation were within tolerance.

Verified in each case:

The band pass filters for each URBIS performed per manufacturer specifications, allowing only waveforms within specific frequencies to be displayed.

The generic transducer analysis software for each URBIS performed per manufacturer specifications. It was verified that the data sampling rate should be at least four times the specified frequency for each particular transducer.

Each URBIS successfully completed the analog/digital converter verification test, which determined the maximum amount of data that could be digitized at various scan speeds.

All URBIS shielded data acquisition cables withstood manufacturer-specified EMI limits with no degradation in performance. A magnetic probe was used to subject cabling to intense EMI fields.

Verified. The Y-axis accuracy of each URBIS transducer was within manufacturer-specified limits.

Verified. The X-axis positioning accuracy of each URBIS transducer was within manufacturer-specified limits.

Initial attempts to obtain data using the manufacturer-specified scan velocity (4.0 in./sec) failed for both the peak detect and RF mode tests. It became evident that RSRM hardware differs significantly from hardware that was used to obtain the vendor-specified scan velocity. New scan velocities were tried, and each URBIS then passed testing. It was determined that a maximum, reliable scan velocity of 2.5 in./sec should be used simultaneously in both the X and Y directions. Scan velocity should be lowered as the amount of data retrieval increases.

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Objective

F. Verify that the manufacturer-specified X-axis scan velocity allows data to be digitized and displayed in both the peak detection and RF modes.

- G. Verify that, in the event of a power failure, the URBIS will provide the operator with enough time to shut down a scan and store all data that had been accumulated up to the point of the power failure.
- H. Verify CRT color scale accuracy and display clarity.
- I. Verify that the color scale presentation on the CRT is the same as the colors produced on the printer.

Additional Objective

J. Verify that data file transfers from the URBIS hard disk to the data tape cartridge and then back do not compromise the data. (This additional objective was added by nondestructive engineering after the completion of CTP-0100.)

Conclusion

Initial attempts to obtain data using the manufacturer-specified scan velocity (4.0 in./sec) failed for both the peak detect and RF mode tests. It became evident that RSRM hardware differs significantly from hardware that was used to obtain the vendor-specified scan velocity. New scan velocities were tried, and each URBIS then passed testing. It was determined that a maximum, reliable scan velocity of 2.5 in./sec should be used simultaneously in both the X and Y directions. Scan velocity should be lowered as the amount of data retrieval increases.

Verified. Each URBIS performed and passed the uninterruptable power supply tests as specified by the manufacturer.

Verified. The CRT display clarity and color were within manufacturer-specified parameters.

Verified. The CRT and printer hard copy display clarity and color matched and were within manufacturer-specified parameters.

Conclusion

Verified. Each URBIS performed and passed the data file integrity verification test with no degradation to the data.

3.3 RECOMMENDATIONS

As a result of the generic system components of the URBIS qualification test, the following recommendations have been made:

1. Each URBIS should be located within a stable environment. Erratic fluctuations in temperature and/or humidity will degrade URBIS performance. Although each URBIS qualification test was performed in an environmentally controlled laboratory, systems in use (particularly at Thiokol Final Assembly) have experienced output problems due to heat. Because the URBIS generates large amounts of heat, ambient temperature should be 75° ±5°F, and relative humidity should be less than 60 percent. All URBIS components should be positioned to allow maximum air circulation and ventilation.

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- 2. An electronic preventative maintenance (PM) program should be established for each URBIS. This program would require that each URBIS be routinely checked after every 125 hr of operation or every 6 months, whichever comes first. The PM would follow the manufacturer's suggested maintenance procedures (identical to the prequalification procedures), which include electronic recalibration, hardware cleaning, and inspecting for wear.
- 3. When the URBIS is being utilized to perform transducer analysis, the URBIS equipment setting should match the equipment setting noted on the manufacturer-supplied transducer certification sheet. The manufacturer-provided URBIS aluminum reference standard shall be used during transducer analysis. The first full backwall reflection from the reference standard shall be used in the analysis. The analysis should not contain more than five half-cycles of the backwall reflection. Unless otherwise specified, the URBIS shall digitize the signal at a sampling rate of at least four times the specified frequency of the transducer. The primary pulse width shall be the inverse of two times the resonant frequency of the transducer. The pulse width shall then be adjusted to obtain the highest amplitude response. Also, all transducers should be recertified at least every six months, depending on use.
- 4. Optimum scan velocities for each inspection technique (clevis, capture feature, pinhole and membrane) need to be determined. The amount of data taken and the component velocities for the X and Y axes govern optimum scan velocities. NDE design engineering is currently working to obtain these optimum scanning velocities.



INSTRUMENTATION

Test instruments were electrically zeroed and calibrated in accordance with MIL-STD-45662. In addition to the URBIS, the following equipment was used during testing:

Instrumentation	Measurement Type
MetroTek, Inc. 5406 Immersion Tank	Generic transducer analysis software verification
Marconi Instruments 10 kHz-1 GHz Signal Generator, 2022C	Band pass filter verification
Tektronix SC 504 Oscilloscope	Band pass filter verification, electronic maintenance
AMDATA Aluminum Reference Standard	System validation, generic transducer analysis software verification
Hewlett Packard 9000 Terminal	Electronic maintenance
Fluke 8025B Multimeter	Electronic maintenance
AMDATA DTM-98 (Diagnostic Test Module)	Electronic maintenance and calibration
Hewlett Packard 3468A RF Voltmeter	Electronic maintenance
11096B High-Frequency Probe	Electronic maintenance

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PHOTOGRAPHY

Still color photographs of the test setup were taken. Copies of the photographs taken (negative series 111325) are available from the Thiokol photographic services department.

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RESULTS AND DISCUSSION

Testing was conducted in accordance with CTP-0100, "Qualification Test Plan For The Generic System Components Of The MTI Ultrasonic RSRM Bondline Inspection System (URBIS)." The test procedures of CTP-0100 were derived from AMDATA manuals and specifications (referenced in Section 7.0, Applicable Documents). It is recommended that CTP-0100 and the AMDATA manuals and specifications be referred to for further explanation of URBIS components and test procedures.

6.1 TEST ARTICLE ASSEMBLY

Each URBIS was delivered from the vendor/manufacturer with the components listed in Section 1.1, Test Article Description. URBIS assembly was not required prior to testing. Each URBIS remained as a single unit; no interchanging of components occurred.

6.2 TEST DESCRIPTION, RESULTS, AND DISCUSSION

Five complete URBIS systems were qualified: 1) Thiokol NDE Lab Inspection System (S/N S-A51866), 2) Thiokol RSRM Insulated Level Inspection System (S/N S-A51868), 3 and 4) Thiokol Final Assembly Loaded Level Inspection System (S/Ns S-A51865 and S-A51869), and 5) KSC Loaded Level Inspection System (P/N 2U129431-001).

The qualification of each URBIS included documentation of the calibration and checkout of the major URBIS components by Combustion Engineering personnel prior to Thiokol's receiving of the URBIS, and then a recalibration and checkout by Thiokol's Electronic Maintenance personnel prior to the qualification test.

Testing at KSC was performed per a test preparation sheet (TPS) (per NASA requirements for ground support equipment) instead of directly following CTP-0100. The TPS outlined the same procedures as CTP-0100, and the post-test TPS is included in Appendix A. Thiokol Electronic Maintenance and NDE design engineering personnel were sent to KSC to perform that portion of URBIS qualification at the RPSF.

Each URBIS at Thiokol's Space Operations was individually rotated off the production line for qualification testing. These URBISs were delivered to the Electronic Maintenance Facility M-71 for prequalification electronic and mechanical maintenance/recalibration and then transferred to the NDE lab M-337A for qualification testing. Results of the four URBIS tests performed at Space Operations are included in Appendix B.

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A summary of each test, as applied to each URBIS, follows:

6.2.1 System Diagnostic Test. (Appendix B, Form A)

Each URBIS passed the system diagnostic self-test as specified in AMDATA engineering specification No. 870128, Section 3.0. The self-test verified that each URBIS component was properly configured and interfaced with all other URBIS components.

6.2.2 System Validation Test. (Appendix B, Form B)

Each URBIS passed the system validation test as specified in AMDATA engineering specification No. 870128, Section 3.0. The system validation tests were performed on the manufacturer-supplied aluminum reference standard. These tests verified that all parameters which could affect data interpretation were within tolerance. The major system validation tests performed were system gain repeatability, distance amplitude correction, time-of-flight software, system noise level, and transient response.

6.2.3 <u>Ultrasonic Electronic Functional Tests</u>

- 6.2.3.1 Band Pass Filter Verification Test. (Appendix A, TPS Item 2.0; Appendix B, Form C). The band pass filters for each URBIS performed per manufacturer specifications, allowing only wave forms within specific frequencies to be displayed. A sine wave was sent from a Marconi Instruments Signal Generator (Model 2022C) into each URBIS receiver unit; the wave was then digitized and real-time displayed. Each band pass filter was individually activated. The frequency of the input signal was increased from just below the band pass filter's specified frequency to a frequency well above the specified frequency. The amplitude of the sine wave versus each specific input frequency was then recorded. Three band-pass filters were tested: a 0.5-MHz high-pass filter, a 4.0-MHz low-pass filter, and an 8.0-MHz low-pass filter.
- 6.2.3.2 <u>Analog/Digital Converter Verification Test</u>. (Appendix A, TPS Item 3.0; Appendix B, Form D). Each URBIS successfully completed the analog/digital converter verification test per manufacturer specifications. This test determined the maximum amount of data that could be digitized at various scan speeds and A-gate widths. (The A-gate determines the amount of data to be digitized.)
- 6.2.3.3 Generic Transducer Analysis Software Verification Test. (Appendix A, TPS Item 4.0; Appendix B, Form E). The generic transducer analysis software for each URBIS performed per manufacturer specifications (Figures 4 and 5). It was verified that the data sampling rate should be at least four times the manufacturer-specified frequency for each particular transducer. This test also utilized the manufacturer-supplied aluminum reference standard to obtain the required signal response. It is essential that the URBIS equipment be set up to match the parameters of the particular transducer equipment; otherwise, the data received will not match the original transducer data. Transducer parameters are listed on each transducer's certification sheet.

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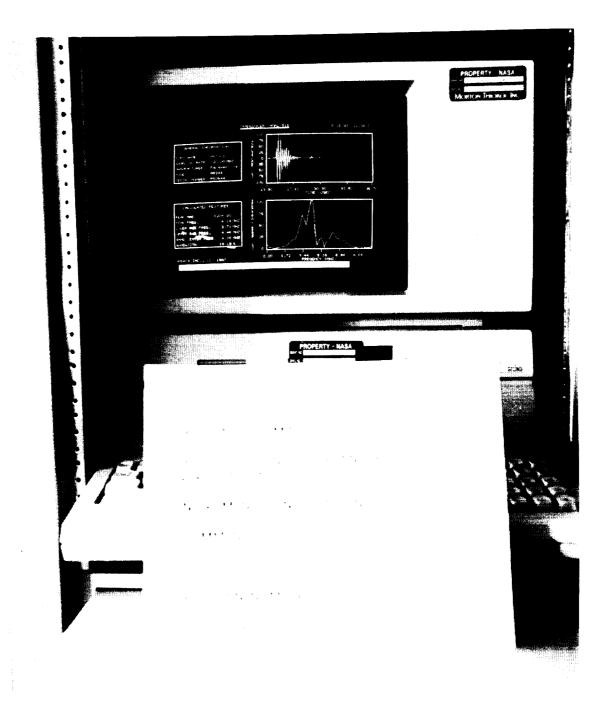


Figure 4. URBIS Generic Transducer Analysis Software Verification Test — Screen Presentation

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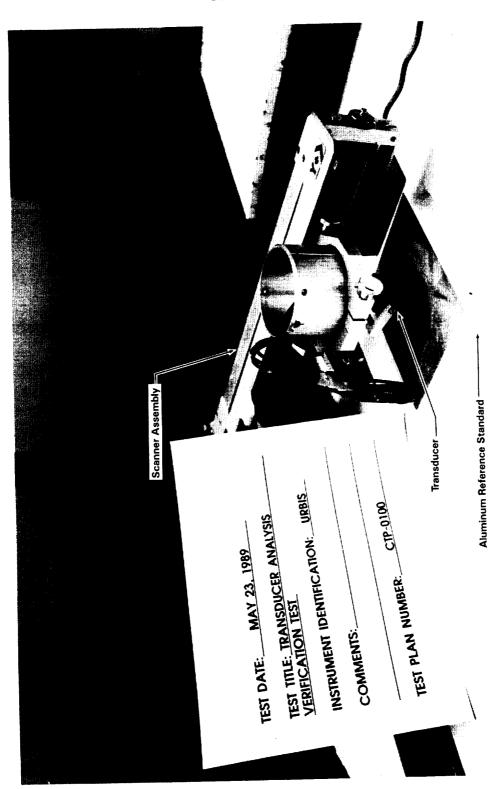


Figure 5. URBIS Generic Transducer Analysis Software Verification Test—Scanner Assembly

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6.2.3.4 Shielded Data Acquisition Cable EMI Test. (Appendix A, TPS Item 5.0; Appendix B, Form F). All shielded data acquisition cables withstood manufacturer-specified EMI limits with no degradation in performance. In order to subject each URBIS to a more intense EMI field than the worst-case field existing in proximity to the M-111 autoclave, a Parker Contour Probe (Model DA-400) was used (Figure 6). To assure maximum EMI penetration, the magnetic probe was used in the dc mode. Flux density was approximately 68,000 lines of flux per in.² at 4-in. pole spacing.

6.2.4 Mechanical Functional Tests

- 6.2.4.1 Y-Axis Transducer Positioning Accuracy Test. (Appendix A, TPS Item 6.0; Appendix B, Form G). Y-axis positioning accuracy of each URBIS transducer was within manufacturer-specified limits. Because large regions on the RSRM are scanned at one time, positioning accuracy is essential. The ability to return to an unbond and measure its size is a necessity. This test verified that each URBIS has this capability.
- 6.2.4.2 X-Axis Transducer Positioning Accuracy Test. (Appendix A, TPS Item 7.0; Appendix B, Form H). X-axis positioning accuracy of each URBIS transducer was within manufacturer-specified limits. Because large regions on the RSRM are scanned at one time, positioning accuracy is essential. The ability to return to an unbond and measure its size is a necessity. This test verified that each URBIS has this capability.
- 6.2.4.3 Y-Axis Scan Velocity Test. (Appendix A, TPS Item 8.0; Appendix B, Form I). Initial attempts to obtain data using the vendor-specified scan velocity (4.0 in./sec) failed for both the peak detect and RF mode tests. It became evident (through discussions with the manufacturer) that RSRM hardware differs significantly from hardware that was used to obtain the manufacturer-specified scan velocity. New scan velocities were tried, and each URBIS then passed testing. It was determined that a maximum reliable scan velocity of 2.5 in./sec should be used simultaneously in both the X and Y directions. Scan velocity should be lowered as the amount of data retrieval increases.
- 6.2.4.4 X-Axis Scan Velocity Test. (Appendix A, TPS Item 9.0; Appendix B, Form J). Initial attempts to obtain data using the vendor-specified scan velocity (4.0 in./sec) failed for both the peak detect and RF mode tests. It became evident (through discussions with the manufacturer) that RSRM hardware differs significantly from hardware that was used to obtain the vendor-specified scan velocity. New scan velocities were tried, and each URBIS then passed testing. It was determined that a maximum reliable scan velocity of 2.5 in./sec should be used simultaneously in both the X and Y directions. Scan velocity should be lowered as the amount of data retrieval increases.

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Figure 6. EMI Test on URBIS Data Acquisition Cable

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6.2.5 Computer Systems Functional Tests

- 6.2.5.1 Uninterruptable Power Supply Test. (Appendix A, TPS Item 10.0; Appendix B, Form K). Each URBIS performed and passed the uninterruptable power supply tests as specified in AMDATA engineering specification No. 870128, p 73. The purpose of this test was to verify that, if facility power was lost during scanning operations, the uninterruptable power supply would provide enough electricity to allow for data storage and equipment shutdown.
- 6.2.5.2 CRT Display and Hard Copy Accuracy Test. (Appendix A, TPS Item 11.0; Appendix B, Form L). Each URBIS completed the CRT display and hard copy test within the manufacturer-specified parameters. Because analysis of the RSRM case-to-insulation bondline requires color scale use on both URBIS CRTs and hardcopy printouts, display clarity and color scale accuracy are essential. The CRT and hardcopy display clarity and color were also verified against the manufacturer specifications.
- 6.2.5.3 <u>Data File Integrity Verification Test</u>. (Appendix A, TPS Item 12.0; Appendix B, Form M). Each URBIS performed and passed the data file integrity verification test with no degradation to the data. This test determined if data file transfers from the URBIS hard disk to the data tape and then back compromised the data.

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APPLICABLE DOCUMENTS

Document No.	<u>Title</u>
CTP-0100	Qualification Test Plan For The Generic System Components OF The MTI Ultrasonic RSRM Bondline Inspection System (URBIS)
Military <u>Standard</u>	<u>Title</u>
MIL-STD-45662	Calibration System Requirements
<u>Manuals</u>	<u>Title</u>
88177	Ultrasonic Testing Training Manual
841812	AMAPS 2090 Scanner Operating Instructions (AMDATA engineering specification)
841224	Quality Test Procedure for AMAPS 2090 Scanner (AMDATA engineering specification)
850108	RDAS Calibration Procedure, Appendix A (AMDATA engineering specification)
850201	Remote Pulser/Preamplifier Operating Manual (AMDATA engineering specification)
850202	Remote Receiver (RR4RT) Operating Manual (AMDATA engineering specification)
850923	Remote Pulser Preamplifier (RPP4RT) Calibration and Certification Procedure (AMDATA engineering specification)
860121	Skewing System Operating Manual (AMDATA engineering specification)
870128	Intraspect/98 Volumetric Inspection System (VIP) Operating Manual (AMDATA engineering specification)
870819	RF Receiver Calibration Procedure (AMDATA engineering specification)
871231	Model 1010 Couplant Supply System Operating Manual (AMDATA engineering specification)
EQ076	Topaz-Uninterruptable Power Source (AMDATA engineering specification)

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Appendix A

TEST PREPARATION SHEET AND RESULTS FOR THE ULTRASONIC QUALIFICATION TEST AT KSC

(includes AMDATA engineering specification No. 870128, "Intraspect/98 VIP Operating Manual")

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Ť		MOD SHEET NUM		TPS NO.		
P E B	NON-CONFIGURATION	X		TPS NO.		
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				LIMITED LIFE	EQUIP. TYE	s 🔯 NO
FREPAF	RED BY ORG. M/ J. PICO THI-GE	EXT. DATE 5251 4/2/89	CONSTRAINT, NEED	WEIGHT REQUI	RED YE	s 🔀 NO
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			1	RETEST PER	T	INSP.
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	THE PURPOSE OF TH	ira TRS IS TO VS	C <i>7/m/89</i> Wasifiy That The			
	1-99 ULTRASONIC 1	FEST EQUIPMENT F	ERFORMS AS			
	SPECIFIED BY THE	VENDOR.				
	INFORMATION:					
1.0	The figure (1704)					
	·					
1.1	REFERENCED INSTRUCTION	ទេ: សភ				
1,2	COMPUTER SYSTEMS: NIA					
1 . 3	SPECIAL TOOLS, SQUIFM	ENT AND MATERIAL	_9:			
<u> </u>	MARCONI INSTRUME	NT		1 CA		
	. 10 KHz SIGNAL GE	NERATOR 20220 S	N. 8-803348	1 EA		
	AMDATA MEMBRANE '	SCANNER W/ARM		1 EG 1 EG		
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	N/SA USAF TEST PREPARATION SHEET (CONTINUATION) Kennedy Space Center / Vendenberg Air Force Base		MOD SHEET NO.						
1 1			<u> </u>	NO. 4A15	<u></u>				
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KSC FORM 4-124 A (REV. 7/82)

PLEASE PRESS HARD! BOTTOM COPY MUST BE READABLE!

	CONTROL NO. 4A156
NASA USAF DESCRIPTION SHEET TEST PREPARATION SHEET	TPS NO (77-0479-00-001-000)
Kennedy Space Center/Vandenberg Air Force Base	TPS NO.
A CONFIGURATION CHANGE PAGE OF	TPS NO.
MOD SHEET NUMBER	TPS NO.
B NON-CONFIGURATION X	TP\$ NO.
PS SHORT TITLE/REASON ULTRASMIC QUALIFICATION TEST	SAFETY HAZARD YES WNO
OLTERSONIC COMMITTEE TO THE TOTAL OF THE TOT	LIMITED LIFE EQUIP. TYES 140
POR POTTISON THI-650 6884	WEIGHT REQUIRED YES YO
RAWINGIST DOCUMENTS	MATERIAL ENGINEER SIGNATURE YES
	RETEST REQUIRED YES
	RETEST PER INSP.
TEM DESCRIPTION (print or type) REQUIRE	L SKILLS U JES - FROM - FROM
2.0 CLOSE THIS MAD	(10)
PARTS WEIGHT RECORDED DATE FINAL ACCEPTANCE	DOTE GOVE CATE
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El + PHI (SE 13 APR 89)	
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TV-MSQ-24 4/13/89	

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l S	edy Space Center/Vandenberg Air F	ore Rese		ROCESSOR UATION)	CONTROL NO.	JA156			
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NO.		DESCI	THE FIGHT IDEA TO STATE OF	1900		TECH.	CONTR GOVT.		
1.4	SUPPORT TOOLS, ES	BIRMEDT AND	MATERIALS	•					
	12 in. Scale divid Hex Whench 9/64 is		171,						
1.3	CSR-028: E	Holgg LECTRICAL	CONNECT	OR HATE/DEHA	T E				
1.6	SAFETY REGISEMENTS	St N-A							
1.7	SPECIAL INSTRUCTI	145:							
	Stack may be worked out of sequence per GC direction. QE GS FIGURES 1-4 SHOWN FOR TEST SET-UP. 4/10/89 086 49								
1.9	OMPS REQUIREMENTS	SATISFIED	BY THIS TRE	5: N/A					
			•						
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TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)

PAGE	OF 25
MOD SHEET NO.	
CONTROL NO.	1A 1 56
TPS NO.	779-00-001-0005

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Kenne	edy Space Center/Vandenberg Air Force Base	_		TPS NO.			SP.
TEM		ESCRIPTION (print or typ	a l		TECH.	CONTR	GOVT.
NO .	VERIFICATION OF BAND PASS	FILTERS:	QL 4H89 BPC VERIFY	y csr-oz8		વિ	्र ^{ाश्} क्षकः
. 1	Connect the Marconi Inst Remote Pulser Preamplifia Turn the power on.	ruments, 20226 W en (BEP) in the	ave Form Gene Channel 1 - 5	eator is th aceive cont	e • + [55]	Q 📀	
.2	Place the URBIS in the Form).	Pitah-Catch rod	e (Page 5-6 c	of the Maste	P.	QE QE 986 9PC	4/13/2
3	Set the Number of waves	averaged as 1.				QE QE QB6 SPC	4/13/29
. 4	Place the I-99 in A-scop	· e mode.				QE 086 086 086 086 086 086	4/13/89
2.5	Set the gain to 17.0 db					2€ 086 086 086 086	1
2.6	Make sure a signal respo			A-scope.		QE Q5	1
	0.5 MHz High Pass F 4.0 MHz Low Pass Fi 8.0 MHz Low Pass Fi	lter - Urr					
PREPA	ARED BY ORG.	EXT. DATE	PAGE ACCEPT	ANCE CONTR	GOVT	Ì	ATE
J.	VIN / J. PICO THI-QE	6051 4-02-					<u> </u>
		APPROVALS - REFER T	NAM		ORG		DATE
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٧.	(ennedy Space Center/Vandenberg Air Force Base) CONTINUATION		CONTROL NO.	o. 4A156				
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ITEM NO.	,		DESCRIPTION (print or type)			TECH.		ISP.
2.8	Sween the Tier	20 20	the Marian Instrument	- 2	0000 C1	 	CONTR	GOVT.
		ne follo	wing tuble. See and the A				OE OE OBG	4/13/54
	Freque	ency 	Amplitude Response					
	250.0	kHz	2.3					
	700.0	kHz	3.1					<u> </u>
	350.0	kHz	7.0					
i	400.0	kHz	15.6					
	450.0	∿Н₂	32.0					
	500.0	kBz	51.6					
	550.0	kHz	82.8					
	Acc. o	kHz	95,3		yloka net			
	4 50.0	чHz	96.1	a	E NOTE:			
	700.0	kHz	93.8	3001	KH2 - 0% FSH KH2 - 0% FSH			
	750.0	kHz	92.2	Sook	HZ - 93.0% FSH			
	950.0	kHz	94.5					
	950.0	kHz	98.4					
	1.00	MHz	100.0					
2.9	Did the D 5 MH-	Hich Pac	s Filter perform properly	<i>i</i> 2			Œ.	
,	YES	_	СИ				OF 086	
	****		1				50C 4/13/89	
					- 10010			
J. YU			EXT. DATE PAGE ACC	EPTANC	ECONTA	GOVT.	DATI	
			PPROVALS - REFER TO LOCAL PROC	EDURES			<u> </u>	¥
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ı	<u>GS</u> 49	THI-GS	E 12 APRE 89 ////	DU	Kell THI	-198	APR 1	1 799
B	. Salar		101-04	U	QE	-0E	APR 1	0 .83
" JUR	14-124D (BEV 7/86)	TV-MSD	A-6		'PC 1" 1	3 C		

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TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)

PAGE	OF 25
MOD SHEET NO.	
CONTROL NO.	1A156
TPS NO.	79-00-001-006

Kenne	dy Space Center/Ve	ndenberg /	Air Force Base)	CONTIN	JATIUN)	TPS	NO. 577-	(479-00)-()() 1 -()()	ic 'j
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NO.					ION (print or)				TECH.	CONTR	G O /
10		0.5 M 4.0 M	e Band Pi hz High (hz Low P i hz Low Pi	fass Fil ass Filt	lter – OF ter – ON	F				UE 086 1/0/89	
11	Sweep the Generator (in %FSH)	per t	he follo	the Ma wing tab	arconi I ble. Rec	instruments ord the Amp	, 20223 Slituda	Signa Sasotha	1	QE Q86 QE Y/1>/27	
		Frequ	ency	; -	Amplitude	: Response					
		1.00	мНг	•	100	0					
		1.50	MHz	-	100						
		2,00	MHz		100.						
		2.50	MHz		97.						
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		4.50	MHZ		7.8		. //	the UE			
		5.00	MHZ		1.6		er N	3/89 086 07E			
		5,50	MHZ		1,6		5.50-	- 7.0 ' '''	٠		
		6. 00	MHE		1.6			NGS WERR	6.º"		
		4.50	MHZ		1.6						
		7.00	MHz		1,0	,					
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	UN / J. PIO	מכ	THI-QE	6251	4 (-)		rounes.			rn :	370
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<u></u>	7,00	IGS 19		A	np 12 mgm	'DRA	wille		THI-LYS		1170
					MPR 12 '89	2		086 086		1 000	0 😘

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Kennedy Se	ace Center/Vandenberg Air Force Base	CONTINUATION	TPS NO. 5 17-047	79-00-001-000				
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NO.			<u>_</u>	æu-				
.12 Di		Filter perform properly?		086 3PC				
ĺ	(ES_V	NO		4/13/20	9			
				Q.S	_			
<u> </u>		Filton- ac follows:		ØE ÖBG	5			
.13 Sw		as Filtera as follows:		4/13/8	9			
	0.5 Mha High ^a 4 A Mha Law Pa	ass Filter - OFF as Filter - OFF						
	8.0 Mhz Low Pa	ss Filter - ON						
		••						
.14 SW	eep the signal on the	Marconi Instruments, 20220	Signal	QE	<u>.</u>			
Ge	nerator per the follow n MFSH) at right.	ing table. Record the Amol	itude respurse	Ø€ ÖBG OF				
' '	n Argez es regios.	•		4/13/8	'9			
	मारकावीताक् त ार हे	and the factor of Sp						
		gray a second de						
		87.8						
	5.00 MHz							
:	5.50 MH.	94.5						
	6.30 MH:	93.0						
	6.30 MH:	93.8	4/15/27					
		93.8	()L					
	7.00 MHz		OF NOTE: 1250	ا بر				
	7.50 MHz		SMHE = 71.9-97.77.	, "				
	5.00 MHz	68,8	10 -105MHZ ->0%FSW					
	8.50 MHz	26.6						
		8.6						
	· 9.00 MHz	υ.Ψ						
		. 0		1	l			
	9.50 MHz	3.9						

THI-QE | 6251 J. YUN / J. PICO APPROVALS - REFER TO LOCAL PROCEDURES DATE ORG DATE ORG NAME GS 49 AR 11 mg 4rg 12 '85 THI-GSE 1.5 t.0 APR 12 '89 THI-GE TV-M9D-2**#** A-8

1.6

PAGE ACCEPTANCE

DATE

4-02-59

EXT.

SC FORM 4-124D (REV. 7/86)

PREPARED BY

10.50 MHz

ORG.

DATE

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				TION CHEET		NO.			
	NASA USAF Design of the Audit	TES	T PREPARA (WORD PRO	CESSOR	CONTROL	101	55		
Some	dy Space Center/Vendenberg Air Force B	l l	CONTINU	ATION)		*7-(479-)	0-001	-0005	E:
Kenne	dy space demonto				TPS NO. 5			INSP.	
ITEM	7	DESCRIP	TION (print or ty)	ne)		TECH	ı. CON'	TR G	
NO.							GE CI		
2.15	Did the 8.0 MHz Low	Pass Filte	er pertorm	buobauta:			δβ	6	
	YES		NO	=			4/13/	84	
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2.16	record comments and	onnection: 11 setting rform the	s onlique gs on the e steps fo	anneonriat		are	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	160 27 27	
	Data and comments:								
					<u> </u>				
		•	Not perfor	nmed Si	86 86				
			NO. 22.	4/1	3/89		a ,		'' DD -
				teumant		TE	į, ο (·	<i>3</i>	PR 1
2.17	Turn the power OFF f	rom the M	Sucour ma.	Jenicia.	y (SR-028	3	Q (39	
2.18	Disconnect Channel 1 connect back to the	l from th⊖ RPF.	Marcofi M	nstrument	NETEL .		0		}!:313
3.0	VERIFICATION OF THE	A/D CONVE	RTER:						
3.1 -	Disconnect 2090 scar	nner from r to t he 3	the 250 FT 25 0 FT, da b	. cable an	d install-	₩.			
	TANDA CON ASS.				icen provide	d and .			
3.2	Connect the 10 in.	arm with	i the o n	Mi pransou	que, protes-	1	0(1.7
							. 		
3.3	Place the 2090 scan	ner on the	e magnetic	track.]'	G	シー	5 * 1 .
			557 34495	tion.		-		$\neg \mid$	
3.4	Set up the couplant					I		シ	191
	Own! ALMATING MED	10 DELETE	THEM 3.1/	NOTIFIED R.P.	ATTISCAL ESE EN 1420 ARS.	6. : 17%			
l		<u>.</u>	•		481 8 17				
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	igs		MPR 12 *89	<i> </i>	1. 11.11	T⊩I-i	ide		
1	GS 49	CHI -BEE	10°K	NULL	MAN,				
1 2	49	THI-6SE	APR 12 189	2	MATT	2E 86 1 5		AGC - 1	100 .88 0

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Kenn	edy Space Center/Vand	enberg Air Force Bese	CONTINUATION)	TPS NO. 577-		
ITEM	1			1.73.40. 3	3 4 7	INSP
NO.		D	DESCRIPTION (print or type)		TECH.	CONTR
3.5	Perform set	ting the follo	owing information as shown b	elow:		GE QE
						181
		D sampling rat	te to 20 MHz. ent to 0.1 in.			13APRS9
	C. Set the	- X-au ne stenr	per motor scanning velocity	£		
	maximum	n. × 189 13.00		20	1	
	D. Place	the system in	the RF Data Acquisition mod	₽.		
	E. Set the	e A-gate as fo	ollows:		1	
	Α-	-gate delay: 3	35 microseconds			
	Α-	-gate width: I	25 microseconds			
	F. Set the	C-gate as fo	ollows:			
	ر. ا	gase belay: 4 -oato width: 1	41 microseconds 35 microseconds			
					1	
	axially	್ ತಬರುಗರ್ಗಟಡೆ .	to 5.0 in circumferentially	v and O.J in	ן ו	
	_					1) May
3.6	If the sca	n_velocity	is excessive , the scan wi	ill terminate	,	(3APPA
1	brawaintell.	<pre>if that hap:</pre>	pens, decrease the scanning	velocity by	, I	129
- 1	0.5 in/sec	increments an	d lattempt the scan again un	itil the scan	,	DE
						v. ~ //
ļ	is combleted	. Record com-	ments below:		1 1	1/4
	is completed Comment		ments below:			N/A
			ments below:			NA
			ments below:			NA
			ments below:			NIA
			ments below:			NA
			ments below:			NA
			ments below:			NA
			ments below:	QE 186		NA
			ments below: Not Preformed	QE 13 APRS9		NIA
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	Camaent		Not Preformed	QE 189 13 APR 59	1 1	₩ 18 9
	Camaent	3:	Not Preformed	QE 13 APR 59		189 SPC
7 8	Comment Execute the s Verify that o	s:scan sequence.	Not Preformed			189 SPC
7 8	Comment Execute the s Verify that o	s:scan sequence.	Not Preformed			₩ 18 9
7 8	Comment Execute the s Verify that o	s:scan sequence.	Not Preformed			189 SPC
7 8	Comment Execute the s Verify that o	scan sequence. data has been Control MHz/wa	Not Preformed	ly distribut		189 8PC 13APREY QE 189 8PC
7 E	Comment Execute the s Verify that t and displayed	scan sequence. tata has been the 5.0 MHz wa	Not Preformed taken in the C-scan. OE -SCAN 189 1340K*1 SPC 189 1340K*1 Eve form has been accurate the spen make a hard copy of the spen accurate the spen accurate the spen make a hard copy of the spen accurate the spen make a hard copy of the spen accurate the spen make a hard copy of the spen accurate the spen make a hard copy of the spen accurate the spen make a hard copy of the spen accurate	ly digitized Omstan aid		189 8PC 134PRE QE 189 8PC
7 B	Comment Execute the s Verify that of send displayed of the send	state has been the 5.0 MHz we state the 5.0 mHz we state the first	Not Preformed	ly digitized Omstan aid		189 8PC 134PRE QE 189 8PC
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7 E	Comment Execute the s Verify that of And displayed Attach to thi Scanning	scan sequence. the 5.0 MHz wa tin the scan s T.P.S., rec Speed:X=/0/A	Not Preformed taken in the C-scan. OE -SCAN 189 134689 EVE form has been accurate the, make a hard copy of the scanning speed below TO DATE PAGE ACCEPTANCE 151 4-02-89	ly digitized Omstan and N.	6	189 13 APRE 1 13 APRE 1 13 APRE 17 13 APRE 17 15 QE 189 SPC
7 E V 3	Comment Execute the s Verify that of And displayed Attach to thi Scanning	scan sequence. the 5.0 MHz wa tin the scan s T.P.S., rec Speed:X=/0/A	Not Preformed taken in the C-scan. OE -SCAN 189 130089 ive form has been accurate the make a hard copy of the scanning speed below Y/S Y= 1.0 1/2 T. DATE PAGE ACCEPTANCE	ly digitized Omstan and N.	6	189 8PC 13APRE 189 8PC 13APRE 189 8PC
7 E	Comment Execute the s Verify that the second displayed stach to the second se	scan sequence. data has been the 5.0 MHz wa in the scan s T.P.S., rec Speed: X = 10/A ORG. EXT THI-QE 6: APPR ORG	Not Preformed taken in the C-scan. OE -SCAN 189 3APR 1 EVE form has been accurate the, make a hard copy of the scanning speed below TO DATE PAGE ACCEPTANCE PAGE ACCEPTANCE TO DATE NAME	ly digitized Omstan and N.	GOVT.	DATE
7 E	Comment Execute the s Verify that the second displayed stach to the second se	scan sequence. data has been the 5.0 MHz wa in the sea s T.F.S., rec Speed:X=/0/A	Not Preformed taken in the C-scan. OE -SCAN 189 134 6 9 Eve form has been accurate the, make a hard copy of the scord the scanning speed below T. DATE PAGE ACCEPTANCE TO DATE PAGE ACCEPTANCE TO DATE PAGE ACCEPTANCE ROVALS - REFER TO LOCAL PROCEDURE	ly digitized Omstan and N.	GOVT.	189 8PC 13APRE 189 8PC 13APRE 189 8PC

			PAGE S	OF	25	
	NASA A USAF	TEST PREPARATION SHEET	MOD SHEET NO.			
5n4r	Onjacting of the Air Entre (in Attendition of Design State of America Distant State of America	(WORD PROCESSOR	CONTROL NO.	4A15	6	
Kenne	edy Space Center/Vandenberg Air Force Base	CONTINUATION)	TPS NO. 5775-0	479-00	-001-00	005
ITEM			<u> </u>	1		ISP.
NO.		DESCRIPTION (print or type)		TECH.	CONTR	GOVT
3.10	If the wave form is not speed by 0.5 in./sec. in speed below. Scanning Speed:	digitized properly, decrease crements and rescan. Record Not Performed	the acanting the acanting 9989 -		QE MA	***
4.0	TRANSDUCER ANALYSIS SOFT SOFTWARE:	WARE VERIFICATION TEST UTILI:	ZING VIF 4.0			
4.1	Place the 2090 scanner direction using the magn	on/vicinity to the test betic track.	lock per GE's	T /	Q 3:39	
4.2	transmitting face in the	axis arms so to place the tr center of the aluminum test	block.	1. 1. T	Q 🚱	
4.3	Place the URBIS in the A from MSTFFT. Record the	-scope mode, using a SET for set form name below.	m created	No. 1	QE	3 A PR 8
•	Form Name: <u>SCTQT</u>	81				
	·				13AR	89
4.4	Set pulse width using th	e formula e shown below:			©E QE 189 SPC	
	P. W. = 1 , :	where: f. W Fulse Width F _M - Resonant Trad Frequency	nsducen			
	F.W. : <u>100 ns</u>					
4.5		noise is not above 7 % FSH., z.	and set the		13 A A QE QE 189 Ser	
		•				
PREPARI	ED BY ORG. E	XT. DATE PAGE ACCEPTA	NCE CONTR	GOVT.	DAT	E
J. YL	JN / J. PICO THI-QE	6251 4-02-8°				
	NAME ORG	PPROVALS - REFER TO LOCAL PROCEDUR		ORG		ATE

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WASA USAF Separate Administration of the Ad					
ITEM NO.	DESCRIPTION (prose or type)				
4.6	Using sufficient A-gate, adjust the Cogale to caption of the aluminum complete back surface reflection off the aluminum Adjust the gain to achieve the signal implitude of Record the gain below. SAIN:				
4.7	Perform the transducer analysis.				
4.8	Verify following information are shown on transoftware verification test, make a hard copy of the analysis and attach to this T.P.S: A. Sampling rate B. Peak magnitude C. Peak frequency D. Upper and lower 6 dB limits E. Band width center frequency F. Band width G. Time - Based response U. Spectral response				

5.0

5.1

5.2

		PAGE 1	() OF	25	
NASA USAF TEST PREPARATION SH		MOD SHEET NO.	. –		
edy Space Center/Vandenberg Air Force Base (WORD PROCESSOR		CONTROL NO.	4A15	6	
· · · · · · · · · · · · · · · · · · ·		TPS NO. 077-0	479-00	-001-0	005
DESCRIPTION (prose or type)					NSP.
			TECH.	CONTR	GOVT.
Using sufficient A-gate, adjust the Sequite to complete back surface reflection off the alumin Adjust the gain to achieve the signal amplitude Record the gain below. SAIN:	num test	block.		QE Q \$8: 13478 0£ 18:	89
Verify following information are shown on t software verification test, make a hard copy of analysis and attach to this T.P.S:				8PC 134P QE 189 SPC	es9
A. Sampling rate B. Peak magnitude C. Peak frequency D. Upper and lower 6 dB limits E. Band width center frequency F. Band width G. Time - Based response U. Spectral response					
ELECTROMAGNETIC INTERFERENCE SHIELDING DATA ACQU VERIFICATION TEST:	UISITION	CABLE		QE 086	
Place the system in the A-Scope mode, set the A- to 5.0 michoseconds and the sampling rate to 20.				OE, 5	
Position the scanner over a bonded region oblock, set signal to 35 % FSH off the eight a reflection.	on the c multiple	alibration back wall	QE 086	QE QE Q86 086 086 087	·£3

PREPARED BY DATE PAGE ACCEPTANCE ORG. EXT. CONTR GOVT. DATE J. YUN / J. FICO | THI-DE | 6251 4-02-69 APPROVALS - REFER TO LOCAL PROCEDURES NAME ORG DATE NAME ORG DATE 16 21 14 APR 12 189 THI-GSE APR 10 189 AP 12 " TV-MSD-24 THI-05 A-12

	or Fook QUALITY				
		PAGE 1	OF	25	
	NASA A USAF TEST PREPARATION SHEET	MOD SHEET NO.			
Pratici Specific	Automatics and Automa	CONTROL NO.	4A15	6	
Kenne	dy Space Center/Vandenberg Air Force Base CONTINUATION)	TPS NO. 577-0	479-00	-001-00	4.5
				INS	
NO.	DESCRIPTION (print or type)		TECH.	CONTR	GOVT.
5.3	Set the scan area to 10.0 in. axially by 5.0 in. circumferentially.	•		DE 189	89
5.4	Perform the scan and record the signal response for the below. Pass Number Signal Response (% FSR)			Q£ 086 4/14/87	
	1 36.2 2 40.3 3 37.1 4 41.7				
5.5	Verify that the signal response does not vary by mor any time during the test. Check correct response be Less than 10%: More than 10%:			QE 086 V/14/87	
5.6	If the signal response vary by more than 10 % at any the test, reperform the signal response test.	time during		OF OF	
	Pass Number Signal Rasponse (% FSH	<u>()</u>		N/+	
	1 2				
	Not performed	4/14/87			
5.7	Take a strong magnet (at least 20 lbs. lifting ford the RDAS, RPP, Scan Controller, and cabling to magne	ra) and arbos atic force.		Q	
5.8	Verify the EMI shielding is performing properly, by the A-scope presentation. Record comments below.			WE 18	9
	comments: NO NOTICEABLE EFFECT ON SIG	NAC		1971	1007

ORG. 4-02-99 | THI-QE | 6251 J. YUN / J. PICO APPROVALS - REFER TO LOCAL PROCEDURES DATE ORG DATE ORG NAME #R 11 100 <u>GS</u> 49 **Arr** 12 ma

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	NASA A	A USAF		****************			PAGE	12	2 of	F 25	_
3	Statement Agranua (1 (2 pm)	Disparament of the Au F Disparament of the Au F	Jones .	TEST PREF	PARATION D PROCESS	SHEET !	MOD SHEET N	10.			
Kenn	nedy Space Center/Vr	/andenberg Air Force B	8000		TINUATION		CONTROL NO		3A15		
TEM							TPS NO.	:-0:	179-00	0-001-00	16.25
NO.	1		DESC	CRIPTION (prin	int or type)				TECH.	INS	-
6.0	Y-AXIS TR/	ANSDUCER POS				CATION			Itun.	CONTR	GO
			/	Nu negati	OF VERTI	CATION	EST:	1		1 1	i
6.2	7ero the 6	opeadans wi	· · · ha	tasseduci				ļ	1	QE	i
J	teru viic c	encaders wit	⊅N the .	transquie	r in the e	extreme -	-Y positio	n.	1	QE OF	i
		N	NOTE						1	4/4/89	r
1	Mark	the membran	ane e	1- to per		*			1		
ļ	cente	erline perpe	e same. andicul/	ar to the	resent une Y-axis.	a transol	ucers	-	ĺ		
ľ					•]	i		
5. 3	Using the	scanner pos	aition c	option in	the scann	nar menu	inathyet		i I	QF	
j	tue 2090 so	canner to	move	the tran	insducer 🔑	in.	in the +		, 1	DE SEG	
	direction.		•	0	DE 4/4/39 7	7.0				4/14/27	
5.4	Place a mar	rk on the me	embrane	a sample (where the	scan tar	rminated.	ŀ	1. A.	a	
	1		OTE					1	11. 1.	\alpha	
1	l								¥:		
1	The ma	ark on the m	membran	e sample	will repr	esent th	18		•	[]	
1	transu ∫	ducers cente	mline ;	perpendic	ular to to	he Y-axi	3.		J	1	
, ,	Olstance be Y-axis posi	uler divide etween the t ition from t information	two mark the scre	∜s, and re	read the in	ndicated.	measure th	2		ØE OF	
		ndicated Y-a		Actual Y		Delta	a			QE 086 SPC 4/14/89	
	Run 1	7.0 N.		7.00	6 W.	0.006	14 14			1	
R	Run 2	7.0 11.	.	6.99	93 141.	0.007	7 IN.		1	1	
ľ	Run 3	7.0_IN.	_	7.00	9 14	0.009					
		Final steps	s/inch	: <u>N/A</u>					1		
-		Counts/inch	7: N/	A	•					1	
									1		
				*							
PARED		ORG.	EXT.	DATE	PAGE A	CCEPTANCE	CONTR	GOV		DATE	
. YUN	/ J. FICO	THI-QE	6251	4-02-	,-8 ₆				V 1.	DA, E	
					TO LOCAL PRO	CEDURES	1	-			-
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NASA	Λ	USAF
National Aeronalist a Space Administration		Department of the Air Entire (policy to provide Air etical)
Kennedy Space	Center/Vander	berg Air Force Base

TEST PREPARATION SHEET (WORD PROCESSOR

15 OF 75 PAGE MOD SHEET NO. CONTROL NO. 4A156

Kanna	dy Space Center/Vandenberg Air Force Base CONTINUATION)			
		TPS NO. 077-04	479-00-	
ITEM NO.	DESCRIPTION (print or type)		тесн.	INSP. CONTR GOVT.
6.6	If the difference between the indicated and actual Y- position is greater than 0.1 in., reperform and steps/inch of the stepper motor, or counts/inch of th encoder until the difference between the indicated ar actual values is within 0.1 in. Record below as show Indicated Y-axis Actual Y-axis Del position position	i change the ne nd wn.	G	N/A DE
	Run 1 Run 2 Run 3 Final steps/inch:			
	Counts/inch: OE Not Performed PC V/1/89	,		
7.0	X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION 1	rest:		
7.1	Zero the encoders with the transducer in the extreme and with enough room to move 16.0 in. in the +X diresampling increment of 0.1 inch and sampling rate at 1	ection, at a	1	0 4/1/27
7.2	Using the scanner position option in the scanner mentionstruct the 2090 scanner to move the transducer 15.0 the +X-axis, mark the transducer centerline perpethe X-axis. Sanform the scan by encoder being zeroed) in. in Dendicular to	1 1	QEOE thy of the
7.3	Place a mark on the membrane sample where the scan to	erminated.	+ ·*\	ર
	NOTE			
	The mark on the membrane sample will represent transducers centerline perpendicular to the X-a:	the xis.		
	,			
	ORG EXT. DATE PAGE ACCEPTA	NCE CONTR	GOVT.	DATE
PREPAR J. Y	ED BY ORG. EXT. DATE PAGE ACCEPTA UN / J. PICO THI-QE 6251 4-02-89			
	APPROVALS - REFER TO LOCAL PROCEDUP	RES		
	NAME ORG DATE NAME		ORG	DATE
1	GS THI-GSE 12 189 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/ /	I-L55_	JPR 11 780
2 B	use Jaidn TV-MSD-24 PP 12 Mr 2	ONE TH	I-QE	Val. 10 ,80

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					PAGE 1	≟ OF	25	
NASA		USAF		RATION SHEET	MOD SHEET NO.			
Kennedy Space	Conter/Vandenberg	1		PROCESSOR NUATION)	CONTROL NO.	4A15		
					TPS NO.	4,9-00) - 001-0/)ui
ITEM '		DES	CRIPTION (pains					ISP.
	3 1011 1 1 1 1		CRIPTION (print			TECH.	CONTR	GOVT
Aun 1 Run 2 Run 3 Run 3 Run 3	ance between is position and following following following fination for the indication fo	n the two ma from the so g information ated X-axis sition (6.0 /N. 6.0 /N. 6.1 steps: // nts/inch: // nce between in., reper counts/in	the indicator form and control value Actual in positive in the indicator form and control value Actual X positive in the indicator in the in	(-axis Detion (5 // O. (N. O	ed Ita Obs W O N O N I position is as/in. of the edifference in.		00000 4/14/89 W/A OE	
PREPARED BY		IG. EXT.	DATE	PAGE ACCEPTAN	CE CONTR	OVT.	DATE	
J. YUN / J.	FILU	THI-QE 625				- <u> </u>		
M.A	IME ~	APPRO\	ALS - REFER T	O LOCAL PROCEDURE	7	ORC	B41	,
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Spice) for	udn	TV-MSD-24	#F.2 % A-	- <i>(/</i> 16	OF THI-	-DE	Km 1.0	. 83.

				PAGE 15 OF 25 MOD SHEET NO. CONTROL NO. 1A156				
			TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)					
Nat Soa	From semi	od glar Ao Fant p og of America						
Kenn	edy Space Center/Vandenberg Air I	FORCE BASE	CONTINC		TPS NO.	-)479-00-		
ITEM NO.	,	DES	CRIPTION (print or t	ype)		TECH.	CONTR	P. GOVT.
8.0	Y-AXIS SCANNING MODES:	VELOCITY V	VERIFICATION	TESTS PEAK	DETECT AND			
8.1	Perform the folls test Peak Detect,	on T	Q QE 189	1				
	A. Set Y-axis s		140000					
	B. Set A/B conv							
	C. Set A-scan c							
	D. Set A-scan W							
	E. Set sampling							
	F. Place system							
	G. Set signal reflection t	.11						
	H. Position tra							
	I. Activate a s	.ns						
	J. When the membrane sam	transducer mple, term	crosses thinate the sto	ie 1 2.0 in.	A ²⁸⁹ mark on t	:he		
8.2	Perform the scan between the ente If the screen dat of the screen and	lis	RE QE 189 SPC 14APER9					
	Run 1 Pan 2 Run 3	2						
	Scan vi	elocity: 🙎	<i>EvneReD 4 IV</i> Not Ferfo	s Acrualla	VG . 3 · 67 ~/} 			
PREPA	RED BY OF	ig. Ex		PAGE ACCEPT	ANCE CONTR	GOVT.	DAT	Ē
			251 4-02-				<u> </u>	
		APP		O LOCAL PROCEDU		ORG	n	ATE
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SC FORM 4-1240 (REV 7/86)

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1	NASA USAF Designation (SEA A Color to the C			TEST PREPARATION SHEET		MOD SHEET NO.				
Kenne	ady Space Center/Ve	some transferred American Series		(WORD PROCESSOR CONTINUATION)		CONTROL NO.	3,415	6	5	
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ITEM NO.	,		ne.	SCRIPTION (prin				IN	ISP.	
8.3	If the dif	farence			- 0.5 inch. inch	PMETT.	TECH.	CONTR	GC	
3.4	down by 0. Make a har Ferform the on Y-axis sand except 1. F. 2. S. R.	5 in./sed copy of copy of Run 1 Run 2 Run 3 Final scanning for the Place system C-scattle Can 1 Run 2 Run 3	Time Time Time an veloc substeps velocit followin stem in 6 in gate in in gate in 1.48 \$ 1.51 \$ 1.475	l an accept treen and a Vincen and a Vincen and a Vincen are vincential victorial vict	J of the step 8. cion test RF Mode 0.0 microseconds. 0 microseconds. 0 locity (12.0 in. 4.05 m/s 4.08	OF SPC //w/87		NA QE VIEN QE VALOSE		
EPARED J. YUN	BY / J. PICO NAME	ORG. THI-		51 4-02	PAGE ACCEPTANG		GOVT.	DATE	'E	
	/ J. PICO	GS THI-	-DE 625 APPRO	51 4-02 VALS - REFER	TO LOCAL PROCEDURE	5				

NASA	Λ	USAF
National Agronautics and Space Administration		Department of the Au Force (In-last States of America
Kennedy Space Cer	ter/Venden	berg Air Force Base

TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)

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MOD SHEET NO.

CONTROL NO. 4A156

TPS NO. 677-0479-00-001-0000

Kenned	ty Space	Center/Vandenberg Air I	Force Base	CONTIN	JATION)	TPS NO. 5777-	0075-00	-001-00	7(7)
						TPS NO.			ISP.
ITEM NO.	,		DESCR	PTION (print or	type)		TECH.	CONTR	
	สอพภ	hv 0.5 in./s	ec. until am	n acceptabl en and atta).5 inch. incre e scan is obta ch to this T.F ocity (12.0 in	ained. P.S.		OE N/A	
				Not Perfo		_			
	MODE	S:			TESTS PEAK				
9.1	Perf Peak	orm the follo Detect, and	wings for X record belo	-axis scann w:	ning velocity	verification	101 1. T		1
	Α.	Set X-axis s	can velocit	y to 4.0 ir	n./sec.			QE 189	
	в.	Set A/D conv	verter sampl	ing rate to	o 20.0 MHz.			MAPRE	
	c.	Set A-scan o	lelay to 15.	O microseco	ond.				
	ס.	Set A-scan b	hidth to 12.	O michoseco	ond.				
	E.	Set sampling	, increment	to 0.1 inch	٦.				
	F.	Place system	n in Feak De	tect mode.					
!	G.	Set signal reflection t	response le so 35 % FSH.	ve) off ti	o≀ @ight multi	ple back-wal	1		
	н.	Position tra	ansducer ove	ല മളുളെ ആവി	I on membrane	sample.			
	1.	Activate a s	stop watch	at the sai	me time the s QE 189 SO SPC 12A		15		
	J.	When the membrane sam	transducer mple, termin	crosses the sto	he land in.	mark on th	16		
				DATE	PAGE ACCEPTA	NCE CONTA	GOVT.	JDA	TE
PREPARI		J. PICO 1	G. EXT. THI-QE 625		l l			(1)	
					TO LOCAL PROCEDU	RES			
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KSC FORM 4-1240 (REV. 7/86)

NASA	Λ	USAF
National Amonautics and Space Administration	23	Department of the Air Force Linited States of America

TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)

PAGE	OF	25	-
MOD SHEET NO.			
CONTROL NO.	4A15	5	_
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	edy Space Center/Vandenberg Al	r PORCE BESE	CONTINC	ATION)	TPS NO.	-0479-00	-001-00	Ch
TEM NO.	,	DESC	CRIPTION (print or to	(ne)		TECH.	IN	
2	Perform the scan between the ent If the screen da of the screen an Fun 1	velocity ered and a ta presenta d attach to Time	Peak Detection is acceptable this T.E.S. Veloc	t, verify to speeds is in obtable, make so that the second in the second	t/- 0.5 inct a hand copy 5 12 APR89	_e	QE SE 189 SPC MAPERS	G
	Run 3	2.16s	VARED 401	$\frac{404 \text{ m/s}}{3.70 \text{ m/s}}$ $\frac{3.70 \text{ m/s}}{3.87}$ $\frac{8}{86} \Rightarrow 3.87$ $\frac{8}{100} = \frac{8}{100} = \frac{100}{100} = \frac$	· /N/s			
	If the difference down by 0.5 in./s Make a hard copy	sec. until .	an acceptable een and attac	scan is obta	ined. .S.		DENJA	
	Run 1 Run 2 Run 3							
	Final s	scan veloci [:]	ty: Not Ferfor	med 14	UPRE9			
PAREC	D BY ORG	G. EXT.	DATE	PAGE ACCEPTANG	CE CONTR	GOVT.	DATE	
		HI-QE 625	1 4-02-89			GÖVT.	DATE	
	N / J. PICO T	HI-QE 625	1 4-02-89 VALS - REFER TO I	LOCAL PROCEDURE				T F
		HI-QE 625	1 4-02-89		s /	GOVŤ. ORG	DATE DATE	

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National Aeronautics and Space Administration		Department of the Air Force United States of America

TEST PREPARATION SHEET (WORD PROCESSOR

OF 25 PAGE MOD SHEET NO. CONTROL NO. 4A156

Kenne	ady Space Center/Vandenberg Air Force Base CON TINUATION)	TPS NO. 077-0	479-00-	001-00	:C5
				IN	SP.
ITEM NO.	DESCRIPTION (print or type)		TECH.	CONTR	GOVT.
9.4	Perform the above substeps A through J of the step \P , on X-axis scanning velocity verification test RF Mode and except for the following.	1		QE 189 144PP	e 9
	1. Place system in RF mode. 2. Set C-scan gate delay to 20.0 microseconds. 3. Set C-scan gate width to 5.0 microseconds. Time Velocity (10.0 in.) Fun 1 2.08 s Run 2 2.10 s Run 3 1.95 s Scan velocity: ENTERED VALUE 4.0 IMPACTUAL VALUE (AURAGED) 3.90	PC /2 APR 89 /time)			
9.5	If the difference is greater than +/- 0.5 inch, incredown by 0.5 in./sec. until an acceptable scan is obtained a hard copy of the screen and attach to this T.F	ment ined.		QEN/A	
	Time Velocity (16.0 in.	/time)			
	Run 1				
	Final scan velocity: A	APR 89			
	·				
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	APPROVALS - REFER TO LOCAL PROCEDUR	ES			
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2	Hardona 14-MSD-14 MP 12 189 A-21	286 TL	H-CE	APR 1	0 8,

VSC EDBM 4-124D (REV 2/84)

NASA	Λ	USAF
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TEST PREPARATION SHEET (WORD PROCESSOR CONTINUATION)

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MOD SHEET NO.

CONTROL NO. 4A156

TES NO. 077-0479-00-001-0007

	TPS NO. 077	'-0479-00	2-001-00	90/5
ITEM NO.	DESCRIPTION (print or type)	TECH.		SP.
10.0	UNINTERRUPTIBLE POWER SUPPLY VERIFICATION TEST:	TECH.	CONTR	GOV
10.1	Set up the URBIS to perform a membrane scan as follows:		DE DE	
	A. Use 10" scanner arm.		APR 1 "189	
	B. Set the scanner velocity to 10.0 in/sec			
	C. Set the scan area to 10.0 in. axially by 5.0 in. circumferentially.			
	D. Set the A-gate Delay to 15.0 microseconds.			
	E. Set the A-gate Width to 12.0 microseconds.			
	D. Set the C-gate Delay to 20.0 microseconds.			
	E. Set the C-gate Width to 3.75 microseconds.			
	F. Set the system for RF mode.			
	G. The filename is SETFWR1			
0.2	As the system is scanning, disconnect the main power line to to system.	νė	QE QE 189 SPC 1 1 4 189	
0.3	Complete shutting the system down in accordance with AMDATA Engineering Specification Number 8701.9 section 1.0, subsection "Uninterruptible Sower Systems" (UPS) and line filter (Attachment 1)		QE QE 189 SPC	
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Chapter 1

INTRODUCTION

This manual provides the information necessary to set up and operate the IntraSpect/98 Ultrasonic Inspection System (I/98) using the Volumetric Inspection Package (VIP).

DESCRIPTION OF 1/98

The I/98 consists of a scanner and scan controller, four-channel data acquisition system, fully programmable ultrasonic front end, data storage and analysis system.

I/98 VIP is Amdata's most advanced system for acquisition, imaging and analysis of ultranonic data. Turn to page 1-2 for a block diagram of the system. A photograph of the system setup is on page 1-3.

Major System Components

- (1) AMAPS 2090 ultrasonic scanner
- (2) Scan Controller 5032
 - (a) RF receiver
- (3) Remote data acquisition system
- (4) HP 9836SC computer
 - (a) RGB monitor
 - (b) CPU/floppy disks, keyboard
 - (c) Hard drive
 - (d) Tape backup system
- (5) Dot matrix printer
- (6) Remote pulser preamplifier
- (7) IntraSpect 9836 APS software package
- (8) Uninterruptable power supply
- (9) 250-foot umbilical cable
- (10) Document package
- (11) Interconnection cables

Optional

RS-232 communications computer interface

Rev. C. 4/10/87, ECN 0645 1-1 1/98 VIP Operating Manual Janet Yun

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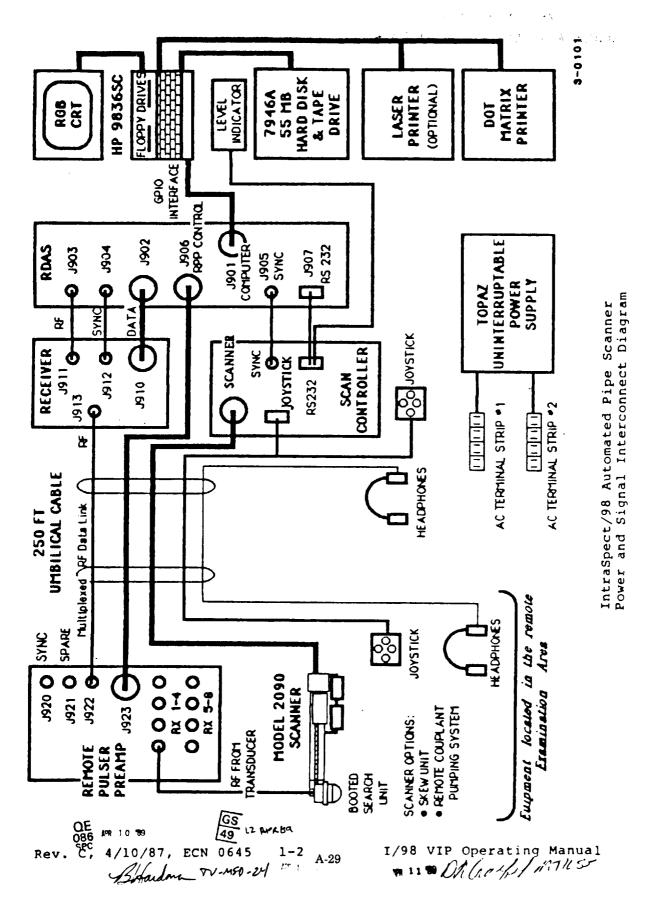
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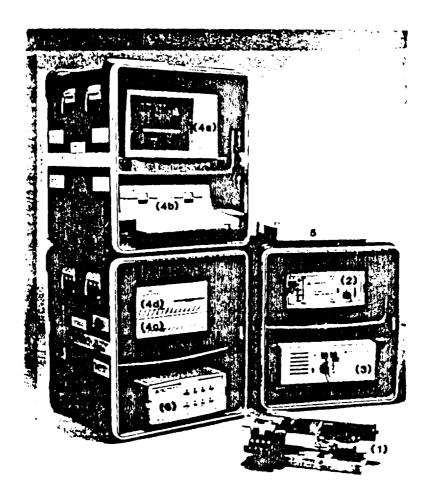
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IntraSpect/98 Data Acquisition and Imaging System

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OTHER REFERENCES

For more detailed information, refer to the following:

ITEM	AMDATA PART NUMBER	DOCUMENT NUMBER
AMAPS 2090 Scanner Operating Manual	35095	841812
SC5032 Scan Controller User Manual	64500	850111
Remote Data Acquisition System (RDAS) Operating Manual	63170	850108
HP 9836SC Computer S/System	65021	EQ077
Uninterruptable Power Supply	y 35131	EQ76
Remote Pulser Preamplifier (RPP4RT) Operating Manual	63700	850201
Remote Receiver (RR4RT) Operating Manual	63600	850202
Umbilical Cable	64203	
Intercom Assembly	63005	EQ078
Instructions for Installation of 360-Degree Track	on 35141	850115
Packing Cases	35083	
IntraSpect/98 VIP Rev. C Software Package	13688	

PERSONNEL QUALIFICATION

Before operating this equipment, personnel should be trained by Amdata or other qualified personnel in the following areas:

- IntraSpect/98 operation
- AMAPS scanner operation

The IntraSpect/98 operation is divided into the following subtopics:

- Test Record Format
- Recording Conventions
- IntraSpect/98 Test Checkout
- Calibration Procedures
- Scanning Procedures
- Data Interpretation

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AMDATA ENGINEERING SPECIFICATION NO. 870128 CONTROL NO. 44156

COMPONENTS AND EQUIPMENT

System Weights and Measurements

The weight of the system components, including the case and case size, are summarized below:

Weight Size (inches) (pounds)

- Case #1: HP 9836 C and display......142...25 1/2 x 30 x 31 3/8
- UPS.....86...24 x 14 x 22 Case #2: Hard disk drive Tape drive
- Case #3: Remote DAS/AD subsystem Receiver
- Case #4: AMAPS scanner......32...15 x 27 x 26 Test fixture . Spare scanner parts
- Case #6: Remote pulser preamp......45...23 x 14 x 21
- 360-degree tracks to fit $\dots 70 \dots 15 \times 27 \times 26$. Case #7: 12", 20", 22", 24", 28" pipe sizes and a 4" to "" adaptor
- Printer (dot matrix)......35....9 x 15 x 21 Case #8: Software and documents Spare parts and expendables

Fuses are taped to the back of the units. Note:

System Modules

To operate and checkout the following components without the HP 9836SC minicomputer in operation, connect a separate terminal with a 9600 baud RS-232C interface (optional equipment) to system modules.

- Scan controller
- Remote data acquisition system (RDAS) •
- Receiver •
- Remote pulser/receiver

The HP diagnostics are included with the Pascal 3.0 software package.

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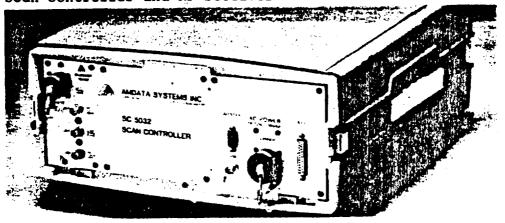
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SCANNING SUBSYSTEM

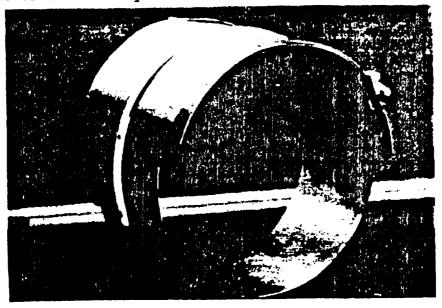
Scanner and search unit



Scan controller and RF receiver



Guide track assembly



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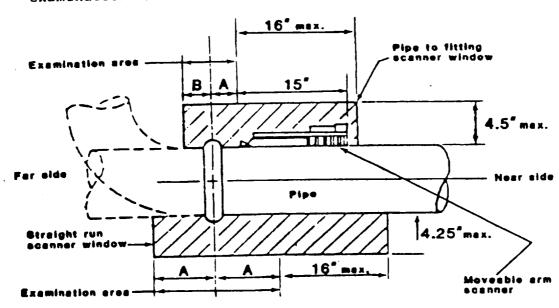
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Scanner

The scanner mounts on a guide track assembly. The wheels of the scanner magnetically couple to the guide track and installation usually takes less than five minutes. The scanner can locate ultrasonic targets within ± 10.03 inch and repeat the measurement within ± 10.06 inch.



A profile of a scanner installed on a pipe and the examination area it covers is shown below.



A: 5.05" mex.

B: 3.7" mex.

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1/98 VIP Operating Manual

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Scan Controller Function

Amdata's scan controller provides slaved or remote control of the scanner. The controller accepts input from an examination operator using a joystick or an RS-232 communications computer interface. The controller operates the scanner motors and accomplishes all scanner-related functions. It maintains count of encoder outputs from the scanner and relays the information to the computer.

The sync output from the controller provides a timing signal that drives other devices, such as the pulser, oscilloscope, data-acquisition system, or other accessory. The 9,600-baud, RS-232C interface is used for communication between the controller and the computer.

The scan controller and power module are packaged in a Tektronix TM 515 power module that operates on 48 to 60 Hz and 90 to 132 or 180 to 260 volts. It weighs approximately 30 pounds, and measures approximately 15 inches wide, 6.8 inches high, and 20 inches deep.

The operator in the examination area can read the scanner position scales and the operator in the control area can observe the encoder position readouts at the controller.

Track

The flexible, mild-steel, guide track adapts to the surface of virtually any geometry and curvature. Because of the flexibility of the track the scanner can be installed on a wide variety of surfaces.

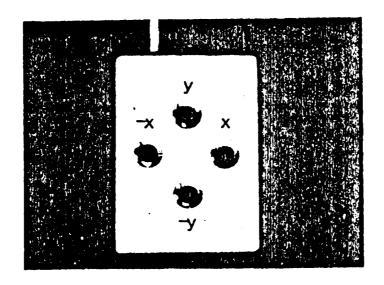
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Setup

Use the push-button control to position the scanner. Mark off the opposite diagonals of a scan rectangle. Alternatively, only the starting point need be indicated.



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1/98 VIP Operating Manual

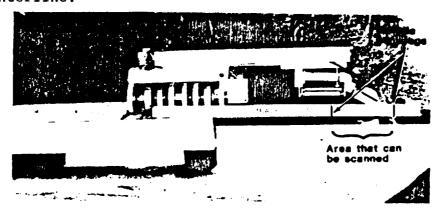
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Poor Lighting/Track Locator

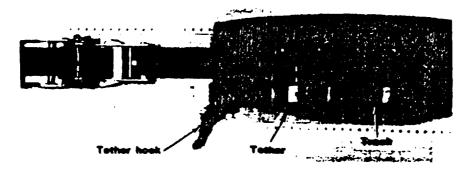
Installation can be accomplished in near darkness. modular design of the track and scanner facilitates installation in poorly lighted areas. The track locator shown below has tactile markings to aid in positioning the lightweight track. Usually the weld crown can be found in poor light.

The track locator is used to start the scan at the weld centerline.



Tether

The tether is a safety cord provided as a precaution in the event the scanner slips off the track. One end attaches to the scanner and the other attaches to a nearby support structure. The tether hook should be attached to the scanner with its open side up to allow maximum clearance of the hook from the scanner trucks. Adjust the tether length so it is long enough to allow free scanner motion but short enough to keep the scanner from impacting on a hard surface if it falls.



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ULTRASONIC INSTRUMENTATION

The ultrasonic subsystem is designed to operate with commercial components. A computer-controlled pulser/receiver is located in the examination area and a computer-controlled receiver is located in the control area. Headphones are used for communication between the examination and control areas.

REMOTE DATA ACQUISITION SYSTEM (RDAS)

The RDAS coordinates the scan controller and the ultrasonic subsystem to produce ultrasonic waveform samples at specific scan grid points. It operates as a slave to the master computer and provides data to the HP 9836. The speed of the system is substantially increased by requiring the HP to set up the scan and thereafter only store and image the data.

The RDAS contains a high-speed, analog-to-digital (A/D) converter (20 MHz transient recorder) and a microprocessor that controls the synchronization between scanner motion and the A/D function. This is accomplished via the respective sync pulses.

UNINTERRUPTABLE POWER SYSTEM (UPS) AND LINE FILTER

In the event the main power is lost, the Topaz UPS 84864 supplies a load of 800 VA for nine minutes. The measured load of 3.85A allows operation for up to 25 minutes. This permits the operator to terminate the operation and save data before the system must be shut down. The system should be shut down as soon as possible to avoid totally discharging the UPS.

The Topaz UPS 84864 has an AC line filter that provides at least 40 dB attenuation at a frequency of 100 kHz. It operates automatically when used properly, connecting the AC line whenever the line voltage is above 85% of nominal. Operation requires the ON/OFF switch be on (the indicator light illuminates when power is at the output recepticle). The audible alarm beeps at 8-second intervals and sounds whenever the inverter is running.

Do not leave the UPS on line when the system is unattended (switch the UPS off). Otherwise the unit can discharge if the facility power is lost. It requires 16 hours to fully recharge the unit after being totally discharged.

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ATTACHMENT - 2 . CTT-04 -00-00 1-0005 CONTROL NO. 4A156 AMDATA ENGINEERING SPECIFICATION NO. 870128

Display BLACK (R,G,B) Q 0 0 Seiko BLACK BLACK BLACK BLACK PJ (R,G,B) 4 4 6	COLOR PALETTE Colors 1 - 3 BROWN 0.45 0.25 0 BLACK MAGENTA BLUE RED 17 8 10	RED 0.8 0 0 RED RED RED RED 53 8 14
Display ORANGE (R,G,B) 1 0.40 0 Seiko RED WHITE WHITE RED PJ (R,G,B) 62 21 13	Colors 4 - 6	YELLOWORAN 1.0 0.80 0 YELLOW RED YELLOW YELLOW 74 45 22
Display YELLOW (R,G,B) 1.0 1.0 0.0 Seiko YELLOW YELLOW YELLOW YELLOW PJ (R,G,B) 89 83 13	Colors 7 - 9 WHITE 1.0 1.0 1.0 WHITE WHITE WHITE WHITE 90 88 85	SATURATED 1.0 0.0 1.0 MAGENTA MAGENTA MAGENTA MAGENTA 53 5 25
	<page 11=""></page>	
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Colors 7 - 9 YELLOW 56 63	WHITE 64 126	<u>SATURATED</u> 127 127
POLARITY MAP (Threshold Negative phase SATURATED RED 0 1 127	Positiv YELLOW	ve phase <u>SATURATED</u> 255 255
GS 12 MP R 84	<page 12=""></page>	
Rev. D, 1/13/88, ECN 0686	TV-MC1-24 Mill	Page 73

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ATTACHMENT-3

APPENDIX O

SPECTRAL C-SCAN

INTRODUCTION

The Spectral C-scan is a data analysis method that displays the frequency content of each waveform in a selected scan region. The sum of the energy in up to four frequency bands are color coded and displayed either in a separate C-scan window or superimposed on the standard C-scan. The form has been modified to support four user defined frequency bands and nine-color spectral mapping.

REQUIREMENTS

Prerequisite options required: None

Option revision:

Revision history: Released as an option to VIP

Revision D.

Software revision required: VIP Revision D

Form revision required: E

RDAS revision required: E18

Scan controller revision required: C

I/98 VIP Operating Manual, General Information on References: the C-scan display and Transducer Analysis option in

the appendices.

Programs for Digital Signal Processing. Edited by the Digital Signal Processing Committee, IEEE Press,

1979.

CAPABILITIES

Spectral C-scans may be performed on any rectangular region of waveforms that is displayed on the screen in a standard C-scan. A rectangular zoom cursor is used to define the analysis region. The Fast Fourier Transform (FFT) is performed on each waveform in the region. Frequency components within four frequency ranges specified in the form are summed and the resulting value is color coded and displayed using the form Spectral Color Map (Figure 1). The color map gives the magnitude ranges that map to each color.

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The FFT is an implementation of the radix-2 Cooley-Tukey algorithm performed in-place. As is the case for other I/98 analysis methods, the C-gate is used to select a portion of the waveform for analysis. However, this FFT algorithm requires that the number of digital samples transformed is a power of two. If necessary, the waveform in the Cognte is padded at the tail end with DC (binary 128) to meet the power of two requirement.

The spectral analysis region is defined by positioning and sizing the rectangular zoom cursor. After a region is analyzed, the system automatically switches to spectral mode, displays the spectral content of the region and outlines it with a white border in order to distinguish analyzed from unanalyzed regions. Cursor outlines are permanently affixed to the C-scan to identify analyzed regions.

At this point, additional analysis regions may be selected on the same C-scan. These regions may be separate, adjacent or
overlapping. A set of such regions may be selected and assembled . to provide a spectral mosaic which efficiently covers areas of interest only. Overlapping regions should be avoided whenever possible because: (a) the program will unnecessarily recompute the FFT for each overlapped waveform and (b) the white outline will obscure spectral data in another region.

Above the C-scan, the system displays:

- 1. The state of the Spectral C-scan toggle, either ON or OFF. When it is OFF, the underlying C-scan is displayed. When it is ON, all spectral analysis regions are outlined and filled according to the Spectral Color Map. The unanalyzed regions are unchanged. These two display states may be rapidly alternated in order to compare and contrast corresponding regions in the Cscan.
- The horizontal and vertical dimensions of the zoom cursor and the horizontal and vertical magnification factors.
- The Spectral C-scan color legend. This legend displays the nine-color code used to map the total energy contained in all four frequency bands. The mapping of color to energy is determined by the Spectral Color Map page of the form.

The results of the spectral analysis are automatically saved to disk and may be displayed again if desired. Spectral files are listed in the directory with a .Sn extension and may be acted upon by the relevant file utility programs, for example, copied from hard disk to floppy disk.

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ALGORITHMS/FORMULAS

The FORTRAN program, FOUREA, in Chapter 1.1 of Programs for Digital Signal Processing served as the model for the FFT implémentation

The magnitude of a single frequency component is equal to the square root of the sum of the squares of the real and imaginary parts:

Magnitude = (Real**2 + Imaginary **2) **1/2

SPECIAL KEYS USED

From the C-scan Zoom menu, four functions are available to support Spectral C-scans. They are:

<k3> Performs spectral analysis on the contents Analyze:

of the zoom window, display and

automatically saves results on disk (to

FORMNAME.Sn).

<k4> Toggle Spectral C-scan display on and off. Toggle:

Read and display the data in the spectral Read: <k5>

(from FORMNAME.Sn) disk file.

Stop: <CLR I/O> Stop spectral analysis computation.

In discussion below these functions are referred to by name.

ERROR MESSAGES

No data in enclosed region

This message is displayed if the zoom cursor contains no valid data points because it is positioned entirely outside the C-scan region.

Spectral frequency band error

This message is displayed if:

- The spectral analysis frequency bands are negative or greater than 1/2 the sampling rate.
- A revision of the form is used which does not (2) contain spectral frequency bands.

RF data file not found; cannot compute spectra

The Spectral C-scan is an analysis method that requires the RF waveform data (.Dn). This message is displayed when spectral analysis is attempted on a data set which contains only peak data.

Spectral data file not found; cannot retrieve spectra

This message is displayed if the corresponding . Sn file is

not found.

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AMDATA ENGINEERING SPECIFICATION NO. 870128 CONTROL NO. 4A156

RESTRICTIONS AND LIMITATIONS

The time to compute the Spectral C-scan depends upon the number of waves within the zoom cursor and the number of samples per wave. Waveforms with fewer samples will be processed significantly faster. Therefore:

- The analysis region defined by the zoom cursor should be as small as possible to avoid lengthy processing delays.
- 2. The number of samples in the C-gate should be as small as possible and equal to a power of 2. The number of samples is the product of the C-gate width and the sampling rate.

SAMPLE WORK SESSION

Load a form which contains RF data, for example, system test form MSTPAUS. Then select C-scan from the Data Analysis menu.

A multi-stroke C-scan is displayed with a green stroke cursor covering the first stroke. Invoke the C-scan Zoom. A white, rectangular cursor, the zoom curnor, is displayed in the lower left hand corner of the C-scan. Initially, it encompasses a one pixel region. Select the zoom cursor sizing option (from the Zoom Help menu, <SHIFT>+<RECALL>). The <LEFT>/<RIGHT> and <UP>/<DOWN> arrow keys are used to change the horizontal and vertical dimensions, respectively, of the zoom cursor.

A white outlined rectangular magnification window is displayed directly above the C-scan. Select the magnification window sizing option (from the Zoom Help menu) and then use the arrow keys to adjust either the horizontal or vertical dimensions of the magnification window.

For example, expand the zoom cursor horizontally to 8 and vertically to 5 such that it encloses to 40 pixels region. Expand the magnification window by a factor of 24 horizontally and 32 vertically. The magnification window then contains 192 (8x24) x 160 (5x32) pixels.

While in the Zoom menu, press <SHIFT>+<ARROWKEY> to move the zoom cursor. Note that the C-scan area enclosed by the zoom cursor is simultaneously displayed above the C-scan in the magnification window.

Next, position to the lower left corner of the zoom cursor to the scanner coordinates 0.0, -2.0. The corresponding C-scan graphics screen image shown in Figure 2. Select the analyze function to initiate the spectral analysis. As the FFT is performed on each RF waveform, a spectral color is assigned and displayed, both in the zoom cursor and the magnification window.

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AMDATA ENGINEERING SPECIFICATION NO. 870128

Move the zoom cursor, resize it and the magnification window, and analyze another region by again selecting the analyze function. Alternate between spectral display on and off by repeatedly selecting the toggle function.

While the data for Spectral C-scan is being calculated, it is also written to disk as a .Sn file. Exit the C-scan display and the re-enter it from the Data Analysis menu. Note that the spectral analysis regions are no longer displayed when the spectral mode is toggled on and off. To retrieve from disk and display the spectral data that has already been computed, select the read function. If desired, additional regions may be analyzed and appended to the existing spectral data file stored on disk. In this manner, it is possible to perform incremental analysis of a data set over several analysis sessions.

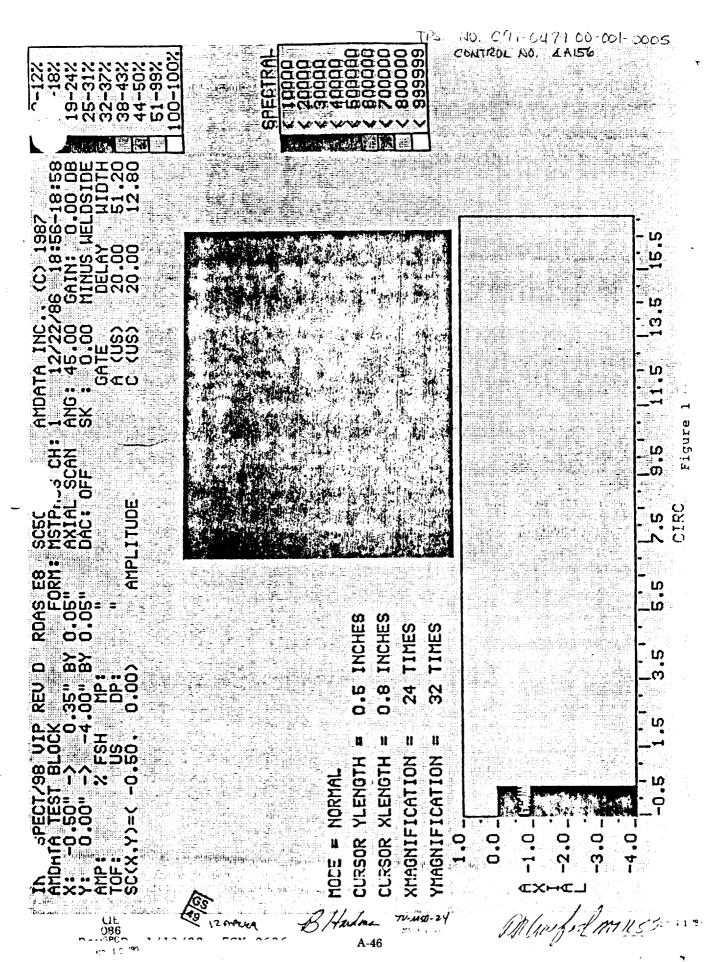
Rev. D, 1/13/88, ECN 0686

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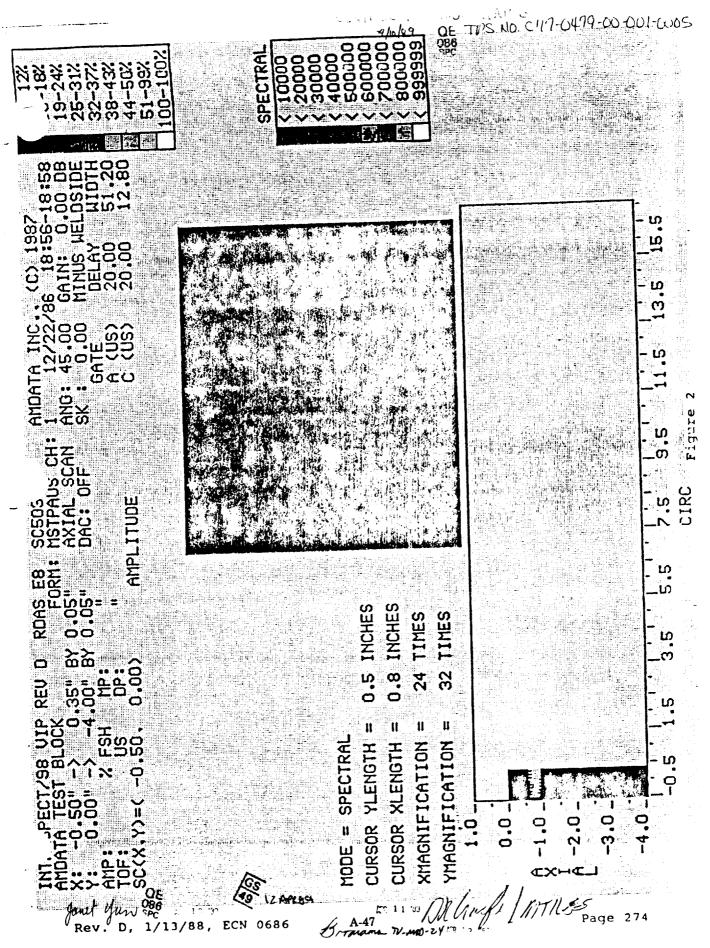
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Page 272

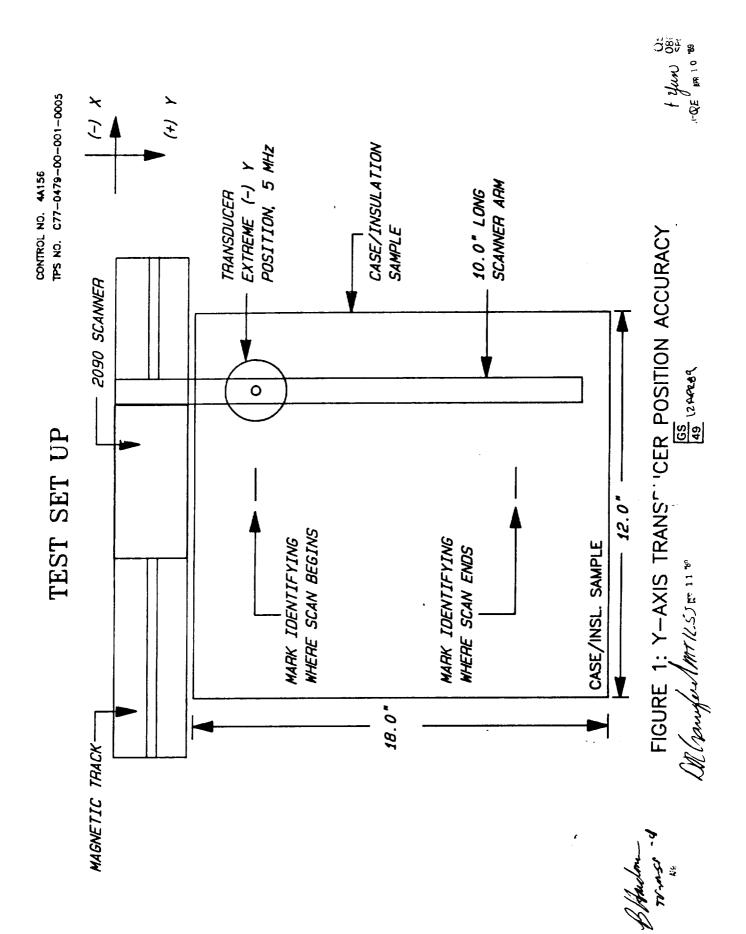
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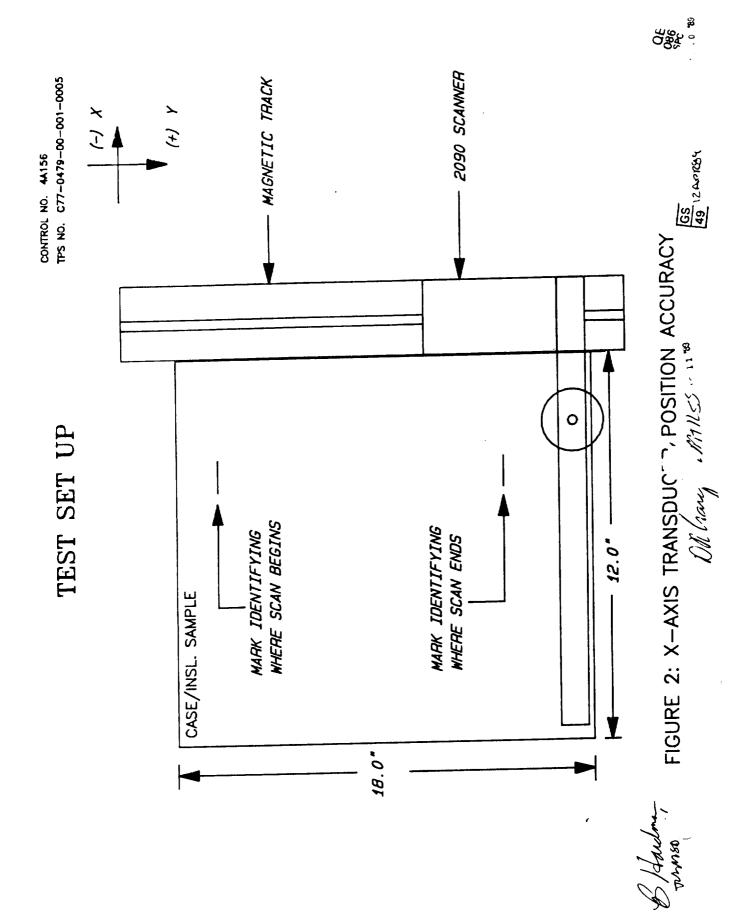


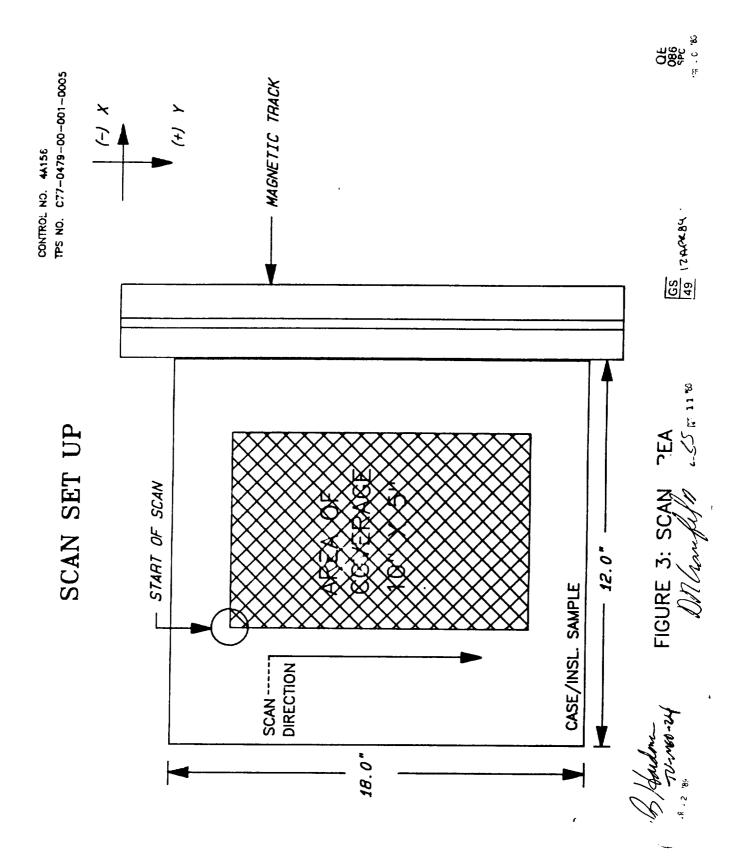
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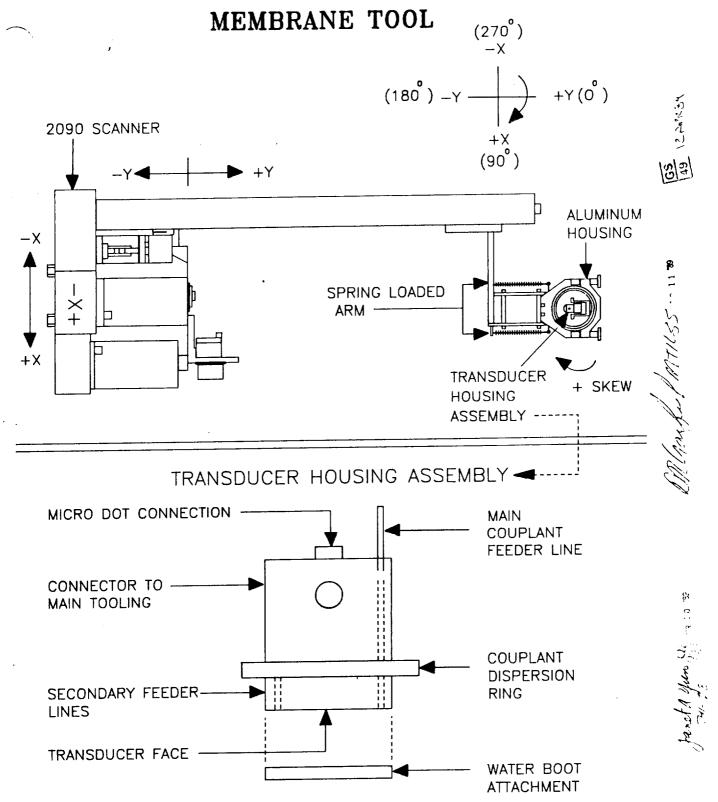
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BLACK AND WHITE PHOTOGRAPH







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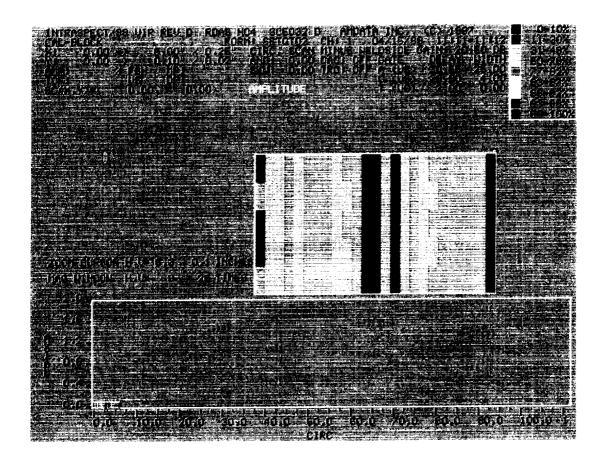
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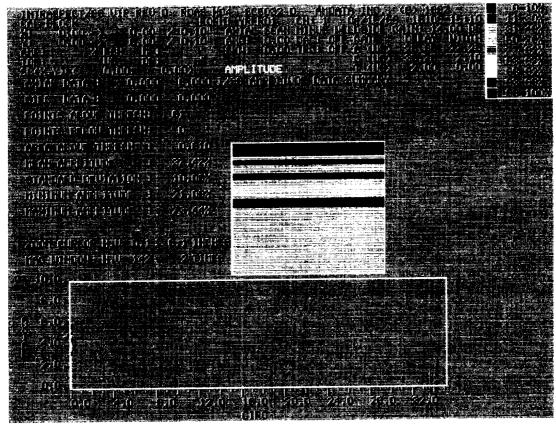
7PS: C77-0479-C0-001-005

STEP. 8.4

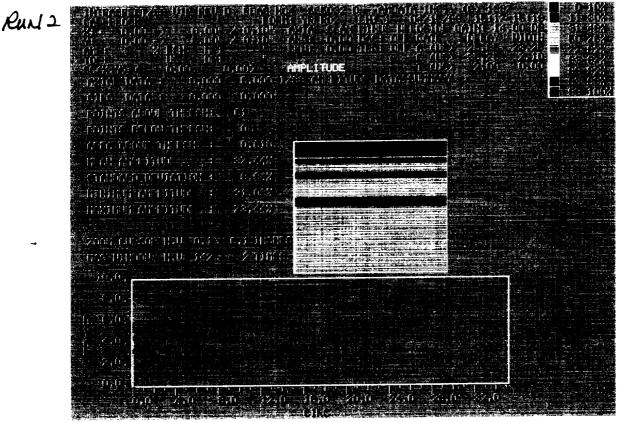
ORIGINAL PAGE COLOR PHOTOGRAPH

RF MODE

Run 1



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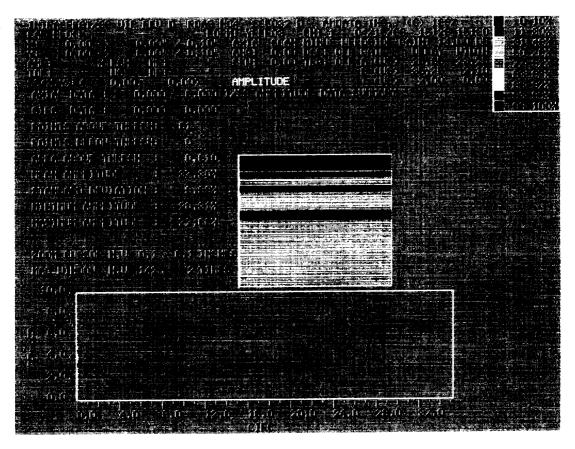
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STEP: 8.4

RF MODE

PUN/3



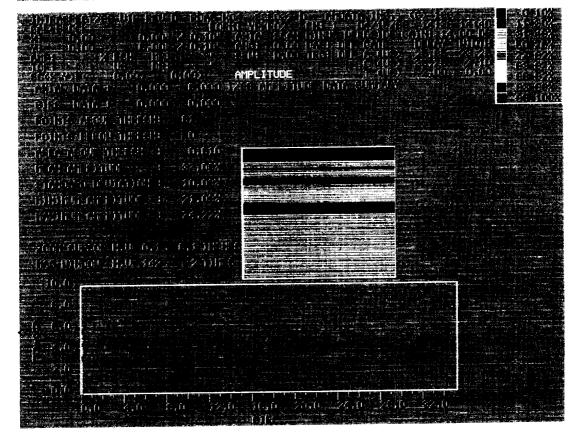
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PEAK DETELT RUNS

RUN 2



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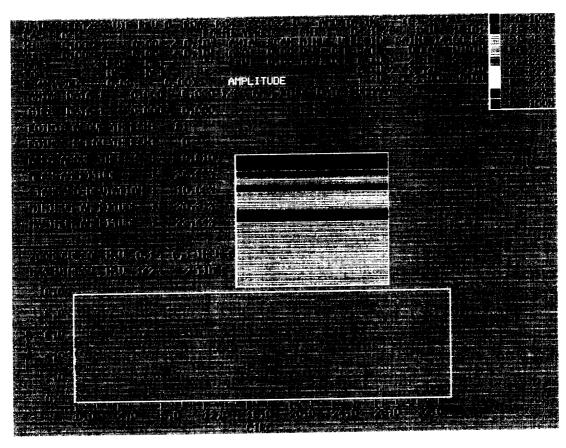
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STEP: 8-2

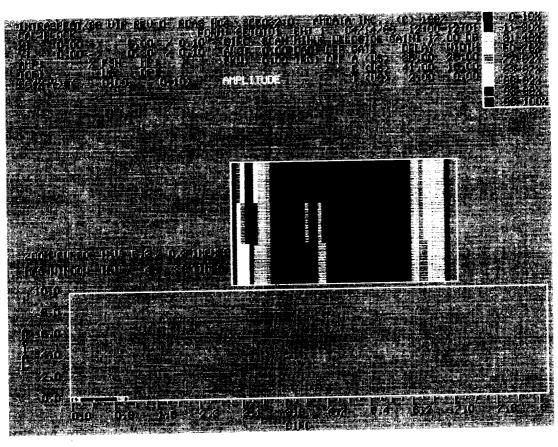
PEAK DETECT

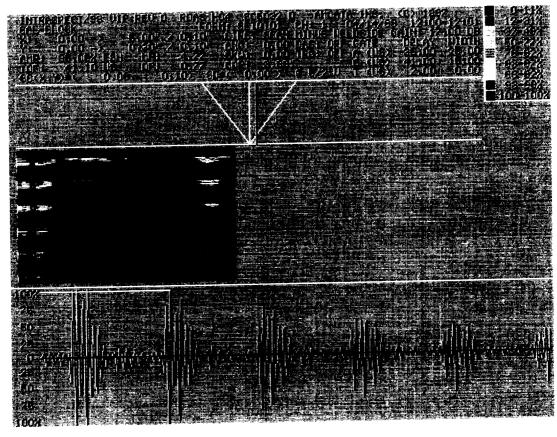
RUN3



ORIGINAL PAGE COLOR PHOTOGRAPH

I/98 QUALIPICATION TEST

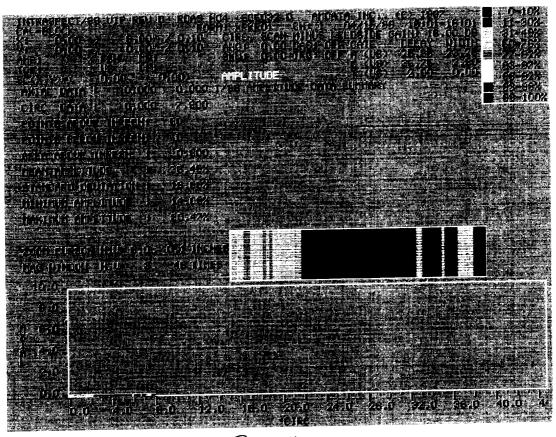




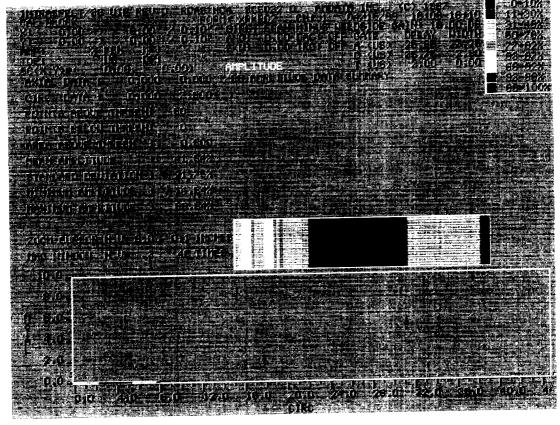
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TEM # 9.2

X-SCANNING-VELOCITY VERIFICATION (PEAK MODE)



RUN #1

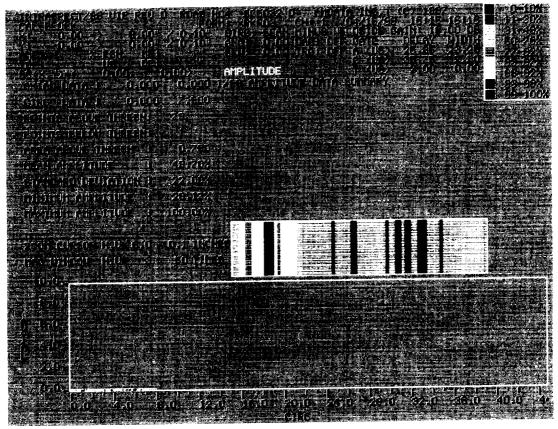


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ORIGINAL PAGE COLOR PHOTOGRAPH

X-SCANNING VELOCITY VERIFICATION (PEAK MODE)



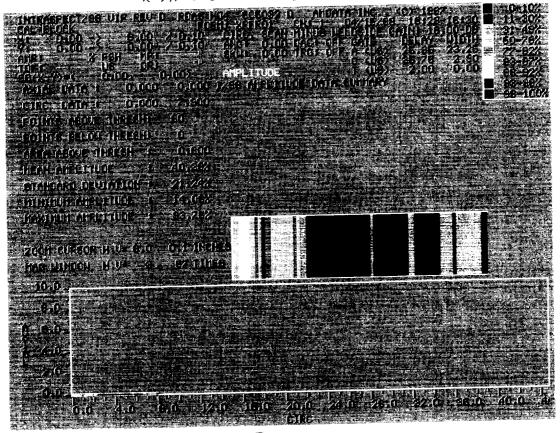
RUN #3

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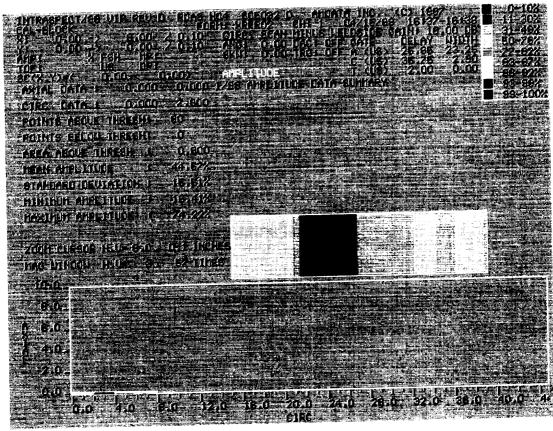
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EM # 9.4

X-AXIS SCAUNING VELOCITY VERIFICATION (RE NODE)



RUN #1

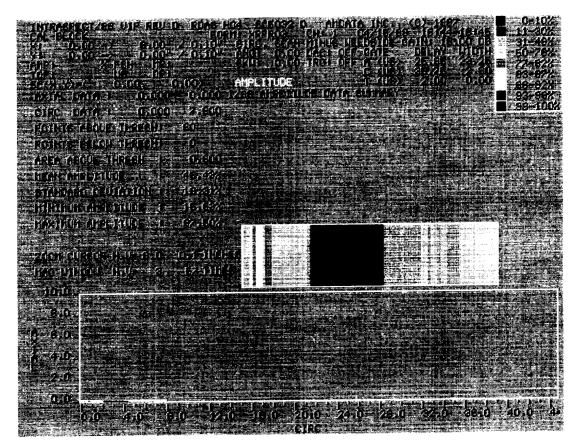


RUN # 2

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TEM 9.4

X- AXIS SCANNING VELOCITY VERIFICATION (RF MODE)



RUN #3

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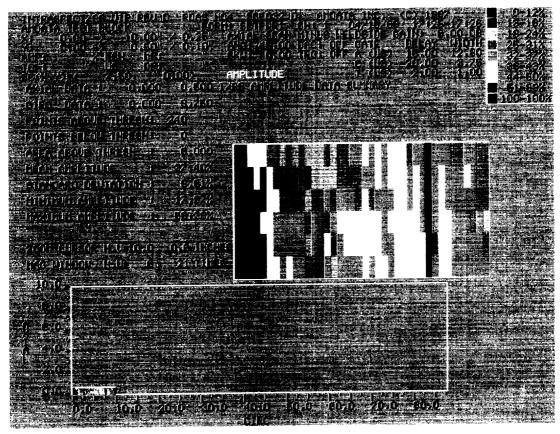
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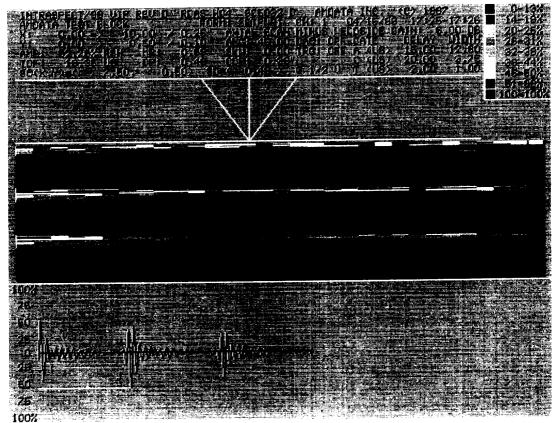
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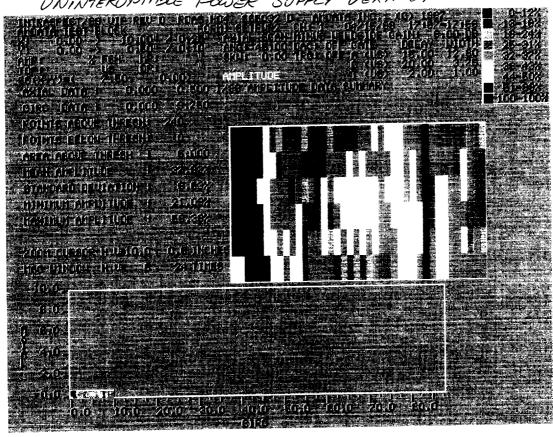
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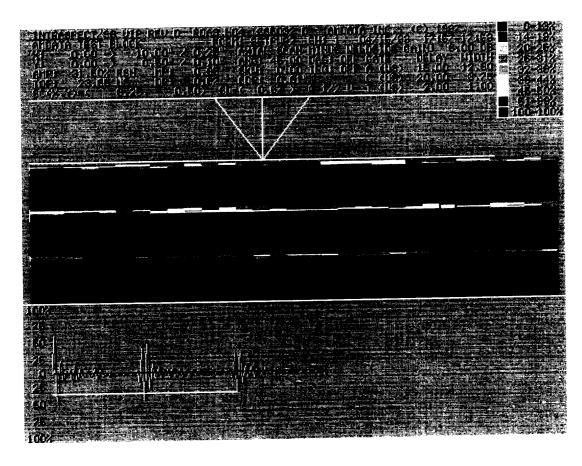
UNINTERUPTIBLE POWER SUPPLY VERIFICATION





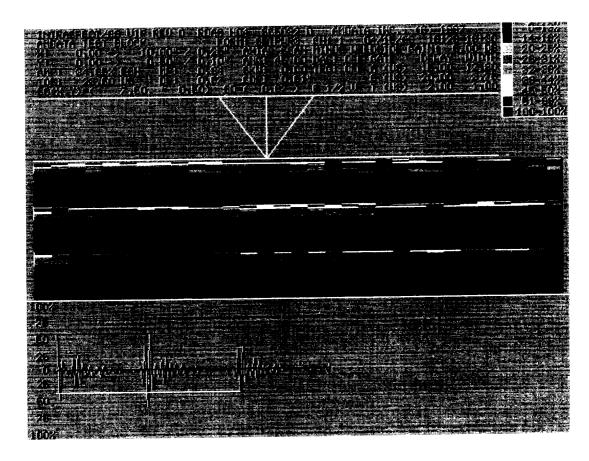
UNINTERUPTIBLE POWER SUPPLY VERIFICATION



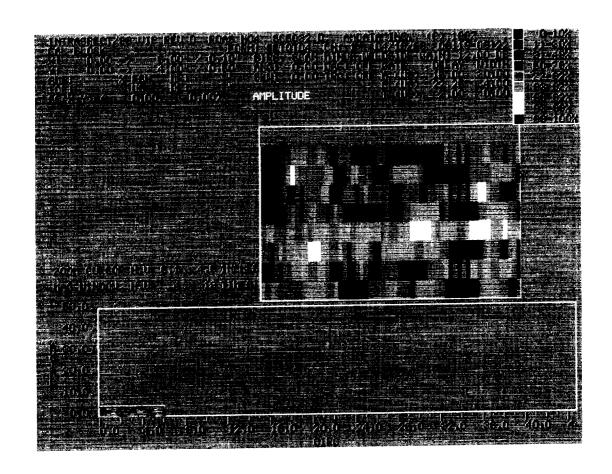


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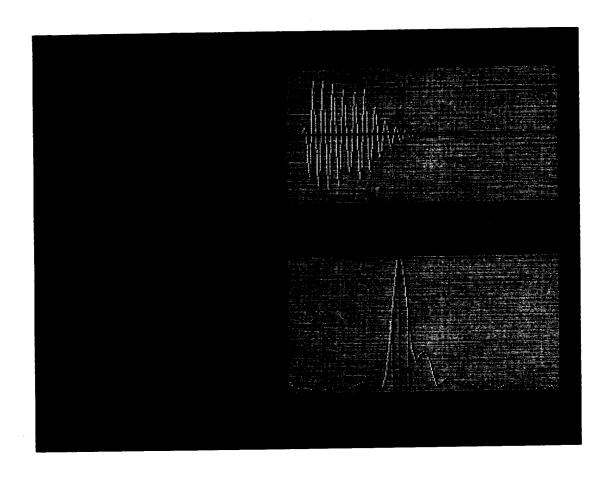


STEP 11.5



	Type <u>ALPHA</u>	Minimum n/a Maximum COLOR PALETTE	n/a
Display (R,G,B) Seiko PJ (R,G,B	BLACK 0 0 0 BLACK BLACK BLACK BLACK 0 4 6	Colors 1 - 3 BROWN 0.45	RED 0.0 0.0 RED RED RED RED 53 08 14
Display (R,G,B) Seiko PJ (R,G,E	ORANGE 1.00 0.40 0 RED WHITE WHITE RED 1)62 21 13	Colors 4 - 6 ORANYELLOW .98	YELLOWORAN 1.0 0.8 0 YELLOW RED YELLOW YELLOW 74 45 22
Display (R,G,B) Seiko J (R,G,E) < v > ne Page: 11	ext page, $< ^ > p$	Colors 7 - 9 WHITE O 1.0 1.0 1.0 WHITE WHITE WHITE WHITE 90 88 85 Prev page, <execute> jump page</execute>	SATURATED 1.0 0.0 1.0 MAGENTA MAGENTA MAGENTA MAGENTA 53 5 25 age, <continue> exit</continue>

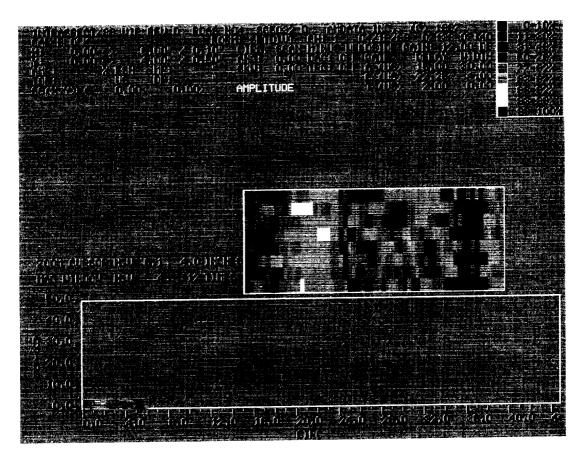
TPS NO. 077-0479-00-001-005



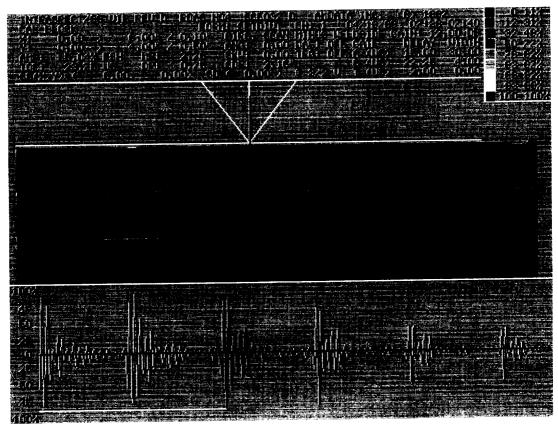
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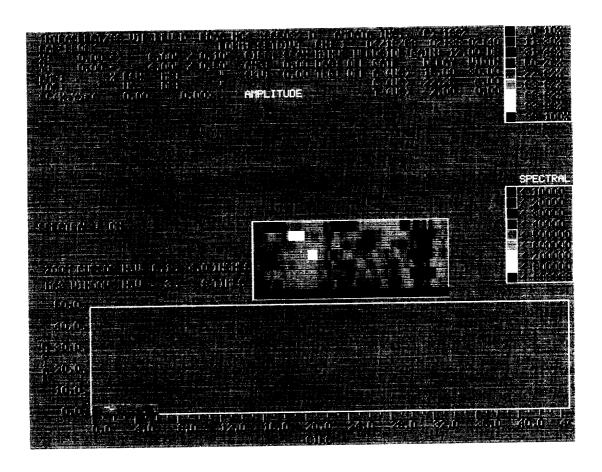
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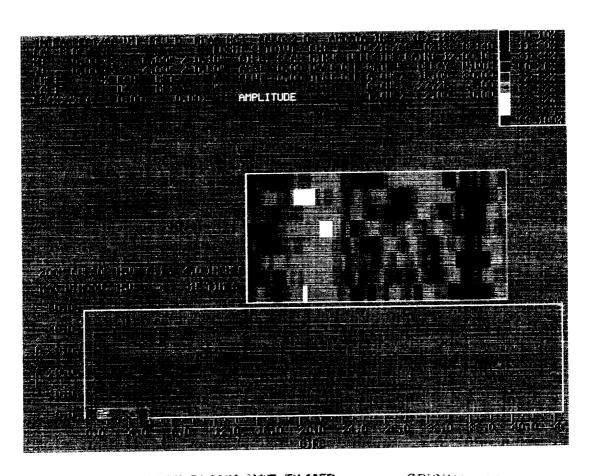
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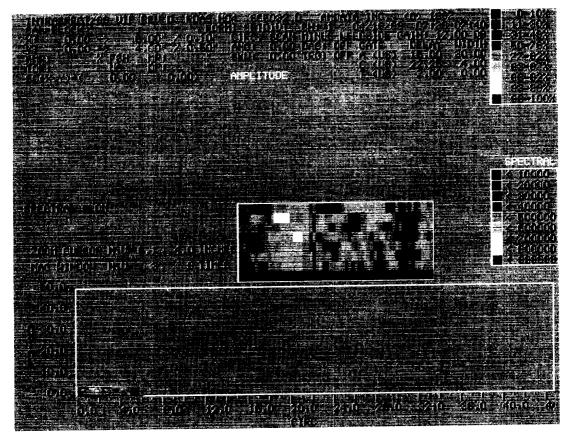
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Appendix B

RESULTS OF THE GENERIC URBIS COMPONENTS QUALIFICATION TEST AT THIOKOL SPACE OPERATIONS

REVISION ____ DOC NO. TWR-18894 VOL.

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GENERIC SYSTEM QUALIFICATION URBIS COMPONENT ASSIGNMENT

LOCATION: M337A

<u>P/N</u>
S-A51866
S-A51866-1
S-A51866-2
S-A51866-3
S-A51865-5
S-A51866-5
S-A51866-6

GENERIC SYSTEM QUALIFICATION URBIS COMPONENT ASSIGNMENT

LOCATION: M111 ANNEX

<u>ITEM</u>	P/N
FLOPPY DRIVE	S-A51868
MONITOR	S-A51868-1
HARD DRIVE	S-A51868-2
TOPAZ	S-A51868-9
SCAN CONTROLLER	S-A51868-3
RDAS	S-A51868-4
RPP	S-A51868-5

* TEST. IF EXCHANGING OF COMPONENTS IS NECESSARY, CONTACT

GENERIC SYSTEM QUALIFICATION URBIS COMPONENT ASSIGNMENT

LOCATION: FINAL ASSEMBLY (SOUTH)

ITEM	<u>P/N</u>
FLOPPY DRIVE	S-A51865
MONITOR	S-A51865-1
HARD DRIVE	S-A51865-2
TOPAZ	S-A51865-3
SCAN CONTROLLER	S-A51866-4
RDAS	S-A51865-5
RPP	S-A51865-6
 -	

GENERIC SYSTEM QUALIFICATION URBIS COMPONENT ASSIGNMENT

LOCATION: FINAL ASSEMBLY (NORTH)

ITEM	P/N
FLOPPY DRIVE	S-A51869
MONITOR	S-A51869-1
HARD DRIVE	S-A51867-3
TOPAZ	S-A51869-3
SCAN CONTROLLER	S-A51869-4
RDAS	S-A51869-5
RPP	S-A51869-6

******************************** * INTERCHANGING OF THESE COMPONENTS WITH OTHER URBIS COMPONENTS *

^{*} DURING THIS SYSTEM'S QUALIFICATION TESTING WILL INVALID THE

^{*} TEST. IF EXCHANGING OF COMPONENTS IS NECESSARY, CONTACT

^{*} EXTENSION 8992 TO OBTAIN CONCURRENCE.

Feb. 17, 1989	S-451866 DELIVERY DATE:
OPERATOR VERIFIED BY:	January, 1987 SOFTWARE VERSION NUM
VERTERED BI:	4.0
OID SYSTEM DIAGNOSTIC TESTS PE	ERFORM PROPERLY?
CIRCLE ONE: YES NO	
F YES, PROCEED TO SYSTEM VALI OTHERWISE PROCEED TO STEP 2 OF	IDATION TEST SEQUENCE, F THIS FORM.
WHICH DIAGNOSTIC TEST(S) FAILE	ED? LIST IN SPACE BELOW.
FAILED DIAGNOSTIC TEST(S)	
WERE ALL CONNECTIONS CHECKED	TO VERIFY PROPER HOOK UP?
CIRCLE ONE: YES NO	
IF NO, CHECK CONNECTIONS.	
DID THE SYSTEM DIAGNOSTIC TEST REBOOTING THE SYSTEM?	STS PERFORM PROPERLY UPON
DID THE SYSTEM DIAGNOSTIC TEST REBOOTING THE SYSTEM?	STS PERFORM PROPERLY UPON
REBOOTING THE SYSTEM? CIRCLE ONE: YES NO IF YES, NOTE BELOW WHAT WAS DO	ONE TO CORRECT THE PROBLEM,
REBOOTING THE SYSTEM?	ONE TO CORRECT THE PROBLEM,

FAILED DIAGNOSTIC TEST(S)
DID INDIVIDUAL SYSTEM DIAGNOSTIC TESTS PERFORM PROPERLY?
CIRCLE ONE: YES NO
IF YES, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOT MTI ELECTRONIC MAINTENANCE.
***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).
IF NO, NOTE IN THE SPACE BELOW WHICH SYSTEM DIAGNOSTIC TEST(S) FAILED.
FAILED SYSTEM DIAGNOSTIC TEST(S)

***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).

DATE:	SYSTEM SERIAL NUMBER:
OPERATOR:	DELIVERY DATE:
VERLFIED BY:	SOFTWARE VERSION NUMB
DID SYSTEM DIAGNOSTIC TESTS F	PERFORM PROPERLY?
CIRCLE ONE: YES, NO	
IF YES, PROCEED TO SYSTEM VAI OTHERWISE PROCEED TO STEP 2 C	IDATION TEST SEQUENCE, OF THIS FORM.
WHICH DIAGNOSTIC TEST(S) FAIL	LED? LIST IN SPACE BELOW.
FAILED DIAGNOSTIC TEST(S)	
WERE ALL CONNECTIONS CHECKED	TO VERIFY PROPER HOOK UP?
WERE ALL CONNECTIONS CHECKED CIRCLE ONE: YES NO	TO VERIFY PROPER HOOK UP?
	TO VERIFY PROPER HOOK UP?
CIRCLE ONE: YES NO	
CIRCLE ONE: YES NO IF NO, CHECK CONNECTIONS. DID THE SYSTEM DIAGNOSTIC THE	
CIRCLE ONE: YES NO IF NO, CHECK CONNECTIONS. DID THE SYSTEM DIAGNOSTIC THE REBOOTING THE SYSTEM? CIRCLE ONE: YES NO IF YES, NOTE BELOW WHAT WAS I	ESTS PERFORM PROPERLY UPON
CIRCLE ONE: YES NO IF NO, CHECK CONNECTIONS. DID THE SYSTEM DIAGNOSTIC THE REBOOTING THE SYSTEM? CIRCLE ONE: YES NO IF YES, NOTE BELOW WHAT WAS IN PROCEED TO SYSTEM VALIDATION	ESTS PERFORM PROPERLY UPON

)	DID INDIVIDUAL SYSTEM DIAGNOSTIC TESTS PERFORM PROPERLY?
	CIRCLE ONE: YES NO
	IF YES, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIF MTI ELECTRONIC MAINTENANCE.
	***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).
	***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S). IF NO, NOTE IN THE SPACE BELOW WHICH SYSTEM DIAGNOSTIC TEST(S) FAILED.
	IF NO, NOTE IN THE SPACE BELOW WHICH SYSTEM DIAGNOSTIC
	IF NO, NOTE IN THE SPACE BELOW WHICH SYSTEM DIAGNOSTIC TEST(S) FAILED.

DATE: & March SCI	SYSTEM SERIAL NUMBER:
OPERATOR:	DELIVERY DATE:
VERIFIED BY:	Tan 87 SOFTWARE VERSION NUMBE
VERTITIES DI	
·	
DID SYSTEM DIAGNOSTIC TESTS PE	RFORM PROPERLY?
CIRCLE ONE: YES NO	
IF YES, PROCEED TO SYSTEM VALIOTHERWISE PROCEED TO STEP 2 OF	DATION TEST SEQUENCE, THIS FORM.
WHICH DIAGNOSTIC TEST(S) FAILE	D? LIST IN SPACE BELOW.
FAILED DIAGNOSTIC TEST(S)	
WERE ALL CONNECTIONS CHECKED T	TO VERIFY PROPER HOOK UP?
CIRCLE ONE: YES NO	·
IF NO, CHECK CONNECTIONS.	
	TO THE PROPERTY AND A
DID THE SYSTEM DIAGNOSTIC TEST REBOOTING THE SYSTEM?	STS PERFORM PROPERLY UPON
CIRCLE ONE: YES NO	
	ONE TO CORRECT THE PROBLEM, THE
PROCEED TO SYSTEM VALIDATION	IBSI.
PROCEED TO SYSTEM VALIDATION TO CORRECTIVE ACTION(S)	

	CONT.) IF NO, NOTE IN THE SPACE BELOW WHICH DIAGNOSTIC TEST(S) FAILED.				
	FAILED DIAGNOSTIC TEST(S)				
)	DID INDIVIDUAL SYSTEM DIAGNOSTIC TESTS PERFORM PROPERLY?				
	CIRCLE ONE: YES NO				
	IF YES, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIS				
	***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).				
	IF NO, NOTE IN THE SPACE BELOW WHICH SYSTEM DIAGNOSTIC TEST(S) FAILED.				
	FAILED SYSTEM DIAGNOSTIC TEST(S)				
	COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.				
	***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).				

DATE: 18 Man 89	SYSTEM SERIAL NUMBER:
OPERATOR: O)	DELIVERY DATE:
VERIFIED BY:	SOFTWARE VERSION NUMBE
DID SYSTEM DIAGNOSTIC TESTS PER	FORM PROPERLY?
CIRCLE ONE: YES NO	
IF YES, PROCEED TO SYSTEM VALIDATION OTHERWISE PROCEED TO STEP 2 OF	ATION TEST SEQUENCE, THIS FORM.
WHICH DIAGNOSTIC TEST(S) FAILED	? LIST IN SPACE BELOW.
FAILED DIAGNOSTIC TEST(S)	
WERE ALL CONNECTIONS CHECKED TO CIRCLE ONE: YES NO IF NO, CHECK CONNECTIONS.	VERIFY PROPER HOOK UP?
DID THE SYSTEM DIAGNOSTIC TEST	S PERFORM PROPERLY UPON
REBOOTING THE SYSTEM?	
REBOOTING THE SYSTEM? CIRCLE ONE: YES NO	
REBOOTING THE SYSTEM?	E TO CORRECT THE PROBLEM, T

									_ _ _
OID	INDIV	'IDUAL	SYSTE	M DIAG	NOSTIC	TESTS	PERFOR	M PROPER	LY?
IRC	LE ON	IE:	YES	NO					
F Y	ES, C ELECT	OMPLE	TE A F MAINT	AILURE ENANCE	/PROBLI	EM REPO	RT, FO	RM N, ANI	ON C
**N	OTE:	BE PR	EPARED	TO DE	SCRIBE	THE SP	ECIFIC	PROBLEM	(S).
F N EST	0, NO (S) F	TE IN AILED	THE S	PACE B	ELOW WE	HICH SY	STEM D	IAGNOSTIC	2
AIL	ED SY	STEM I	DIAGNO	STIC T	EST(S)				- -
					·				-

	DATE: 2-/14/89	SYSTEM SERIAL NUMBER: 5 - A51866 CAL. BLOCK SERIAL NUMBER:
	OPERATOR: CUShing	URBIS OOI (membrane)
	VERIFIED BY:	SOFTWARE VERSION NUMBER:
	- Airent 1	
L)	DID ALL SYSTEM VALIDATION TESTS TOLERANCES SET FORTH 1N AMDATA E NUMBER 870128, SECTION 3.0?	STAY WITHIN THE SPECIFIED NGINEERING SPECIFICATION
	CIRCLE ONE: (YES NO	
	IF YES, PROCEED TO BAND PASS FIL	TER VERIFICATION TEST.
	IF NO, LIST BELOW THE TEST(S) TH SPECIFIED TOLERANCES AND BY HOW	AT DEVIATED OUTSIDE OF THE MUCH.
	FAILED SYSTEM VALIDATION TEST(S)	
2)	WERE CONNECTIONS AND INSTRUCTION VALIDATION TEST REVERIFIED?	IS FOR PERFORMING THE SYSTEM
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO STEP 3 OF THI	S FORM.
	IF NO, REVERIFY ALL INSTRUCTIONS THIS TEST.	S AND CONNECTIONS UNIQUE TO

)	UPON RE-PERFORMING THE SYSTEM VALIDATION TEST SEQUENCE, DID EACH INDIVIDUAL TEST STAY WITHIN TOLERANCE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, THEN PROCEED TO BAND PASS FILTER VERIFICATION TEST.
	CORRECTIVE ACTION(S)
	IF NO, NOTE IN THE SPACE BELOW WHICH TEST(S) FAILED AND BY HOW MUCH. ALSO, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).

	DATE:	SYSTEM SERIAL NUMBER:
	OPERATOR: Brad Cashing	CAL. BLOCK SERIAL NUMBER: Membrane (URBIS CO1)
	VERIFIED BY:	SOFTWARE VERSION NUMBER:
1)	DID ALL SYSTEM VALIDATION TESTS TOLERANCES SET FORTH IN AMDATA NUMBER 870128, SECTION 3.0?	
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO BAND PASS F	ILTER VERIFICATION TEST.
	IF NO, LIST BELOW THE TEST(S) SPECIFIED TOLERANCES AND BY HOW	
	FAILED SYSTEM VALIDATION TEST(S	5)
2)	WERE CONNECTIONS AND INSTRUCTION VALIDATION TEST REVERIFIED?	ONS FOR PERFORMING THE SYSTEM
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO STEP 3 OF TE	HIS FORM.
	IF NO, REVERIFY ALL INSTRUCTION THIS TEST.	NS AND CONNECTIONS UNIQUE TO

			G THE S EST STA			ON TEST	SEQUEN	CE, D	ID
CIRC	CLE ONE	E: YE	s no						
						AS DONE FER VERI			
CORF	RECTIVE	E ACTION	(S)	. <u></u>					
HOW	MUCH.	ALSO,		E A FAI	LURE/PRO	EST(S) E OBLEM RE			
***N	NOTE: E	E PREPA	RED TO	DESCRIB	E THĖ SI	PECIFIC	PROBLE	M(S).	

	OPERATOR: VERIFIED BY:	SYSTEM SERIAL NUMBER: CAL. BLOCK SERIAL NUMBER: Membrea ((URBIS 00)) SOFTWARE VERSION NUMBER: L) (
1)	DID ALL SYSTEM VALIDATION TESTS TOLERANCES SET FORTH IN AMDATA E NUMBER 870128, SECTION 3.0?	STAY WITHIN THE SPECIFIED NGINEERING SPECIFICATION
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO BAND PASS FIL	TER VERIFICATION TEST.
	IF NO, LIST BELOW THE TEST(S) TH SPECIFIED TOLERANCES AND BY HOW	AT DEVIATED OUTSIDE OF THE MUCH.
	FAILED SYSTEM VALIDATION TEST(S)	
2)	WERE CONNECTIONS AND INSTRUCTION VALIDATION TEST REVERIFIED?	S FOR PERFORMING THE SYSTEM
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO STEP 3 OF THI	S FORM.
	IF NO, REVERIFY ALL INSTRUCTIONS THIS TEST.	S AND CONNECTIONS UNIQUE TO

)	UPON RE-PERFORMING THE SYSTEM VALIDATION TEST SEQUENCE, DID EACH INDIVIDUAL TEST STAY WITHIN TOLERANCE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, THEN PROCEED TO BAND PASS FILTER VERIFICATION TEST. CORRECTIVE ACTION(S)
	- CONTROLLAND -
	IF NO, NOTE IN THE SPACE BELOW WHICH TEST(S) FAILED AND BY HOW MUCH. ALSO, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE

***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).

	OPERATOR: B Lishing VERIFIED BY: (4.1.5)	SYSTEM SERIAL NUMBER: SA-51867 CAL. BLOCK SERIAL NUMBER: NHA Membrane (URBIS 00) SOFTWARE VERSION NUMBER: 4.0
1)	DID ALL SYSTEM VALIDATION TESTS TOLERANCES SET FORTH IN AMDATA E NUMBER 870128, SECTION 3.0?	STAY WITHIN THE SPECIFIED NGINEERING SPECIFICATION
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO BAND PASS FIL	TER VERIFICATION TEST.
٠	IF NO, LIST BELOW THE TEST(S) TH SPECIFIED TOLERANCES AND BY HOW	AT DEVIATED OUTSIDE OF THE MUCH.
	FAILED SYSTEM VALIDATION TEST(S)	
2)	WERE CONNECTIONS AND INSTRUCTION VALIDATION TEST REVERIFIED?	S FOR PERFORMING THE SYSTEM
	CIRCLE ONE: YES NO	
	IF YES, PROCEED TO STEP 3 OF THI	S FORM.
	IF NO, REVERIFY ALL INSTRUCTIONS THIS TEST.	AND CONNECTIONS UNIQUE TO

3)	UPON RE-PERFORMING THE SYSTEM VALIDATION TEST SEQUENCE, DID EACH INDIVIDUAL TEST STAY WITHIN TOLERANCE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT TH PROBLEM, THEN PROCEED TO BAND PASS FILTER VERIFICATION TEST
	CORRECTIVE ACTION(S)
	IF NO, NOTE IN THE SPACE BELOW WHICH TEST(S) FAILED AND BY HOW MUCH. ALSO, COMPLETE A FAILURE/PROBLEM REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	***NOTE: BE PREPARED TO DESCRIBE THE SPECIFIC PROBLEM(S).

BAND PASS FILTER VERIFICATION TEST

DAT	E: 😜	· 1122 8 9	SYSTEM SERIAL NUMI S-A51866	
OPE	RATO	R: / / / / / ·	OSCILLOSCOPE SERIA	
VER (DBY:	WAVE FORM GENERATO SERIAL NUMBER:	OR
SOF	TWAR	E VERSION NUMBER:	<u>U-B03348</u>	
1)	COM	PLETE THE FOLLOWING CH	HECK LIST:	COMPLETED (INITIALS)
-,	a)	Connect the Marconi l Wave Form Generator t Preamplifier (RPP).	Instruments, 2022C to the Remote Pulser	
	b)	Intraspect 9836 APS	is in A-scope mode	- //-
	c)	A continuous wave put the RPP	lse is being sent into	
	d)	A signal response is A-scope	being obtained of the	
	e)	Gain is set to 17.0	dB	-1/k-
	f)	Record frequency versing the free 5 of this form).	quency up (page 3, 4, &	//
2)	Dic	d the band pass filter	s perform properly?	
	Cir	rcle one: Yes No		
			onvertor verification te	
	tes	no, verify that all c st are properly hooked low, which filter(s) f	onnections unique to thi up, and note in the spa ailed.	s verification ce provided
	Fai	iled Band Pass Filter(s)	

)	Upon re-performing this test, did the band pass filters perform properly?
	Circle one: Yes No
	If yes, note in the space below, what was done to correct the problem.
	Corrective Action(s)
	If no, complete a Problem/Failure Report, Form N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe the specific problem(s).

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 0.5 MHz HIGH PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
250.00 kHz //	OAC.
250.00 MIZ	2.9
300.00 kHz	
350.00 khz 5.5	2.3%
400.00 kHz 13.3	13,3%
450.00 kHz 27.3	10.5%
500.00 kHz 52.3	40.6%
550.00 kHz 75.0	61270
600.00 kHz 600 8	9.7/6
650.00 kHz & 5,72	<u> </u>
700.00 kHz & 500 3	60 9%
750.00 kHz 85.9	42.2%
850.00 kHz ≲ 3	28 1%
950.00 kHz 57 /	78.1%
1.00 MHz 67.8	13.3%

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 4.0 MHz LOW PASS FILTER

FREQUENCY	<i>(</i>	AMPLITUDE RESPONSE	
1.00 MHz	90. G	11.7%	24.1%
1.50 MHz	E4. E	5237 H.740	40,6%
2.00 MHz	68.3	89.170 H.190	39.1%
2.50 MHz	544	75.6%	85,2%
3.00 MHz	78.9	30.5 90	Ec. 5 %
3.50 MHz	71.9	25, 2 /0	77.3%
4.00 MHz	33 9	47.770	734 %
4.50 MHz	7,0	7.0%	695%
5.00 MHz	1. le	1,6%	66.4%
5.50 MHz	1.6	1.670	Go. 9 %
6.00 MHz	1. U	1.4.70	53.1%
6.50 MHz	1. Ú	1.6%	43.0%
7.00 MHz	1.6	1.6%	28.9%

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 8.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
5.00 MHz	(isili
5.50 MHz	lic.
6.00 MHz	53.9
6.50 MHz	400
7.00 MHz	289
7.50 MHz	133
8.00 MHz	16.7
8.50 MHz	. <u>5.6</u>
9.00 MHz	3.4
9.50 MHz	2.3
10.00 MHz	J. le
10.50 MHz	1.6
11.00 MHz	1.6

BAND PASS FILTER VERIFICATION TEST

	OPERATOR: Brad Cushing		SYSTEM SERIAL NUMBER: SA 51868 OSCILLOSCOPE SERIAL NUMBER: U-BOO3401	
VERIFIED BY: WAVE FORM OF SERIAL NUMBER		AVE FORM GENERAT ERIAL NUMBER:	ENERATOR ER:	
	TWAF	E VERSION NUMBER:	U-B03348	
1)	COM	PLETE THE FOLLOWING CHECK LIS	T:	COMPLETED (INITIALS)
	a)	Connect the Marconi Instrume: Wave Form Generator to the Representation (RPP)	emote Pulser	Q.K.
	b)	Intraspect 9836 APS is in A-	scope mode	BSC
	c)	A continuous wave pulse is be the RPP		BSC
	d)	A signal response is being of A-scope.		G.K.
	e)	Gain is set to 17.0 dB		<u> </u>
	f)	Record frequency versus amplified incrementing the frequency up 5 of this form).	p (page 3, 4, &	<u> </u>
2)	Did	the band pass filters perform	n properly?	
	Cir	cle one: Yes No		
	If	yes, proceed to A/D convertor	verification tes	st.
	tes	no, verify that all connection t are properly hooked up, and ow, which filter(s) failed.	ns unique to this note in the space	s verification ce provided
	Fai	led Band Pass Filter(s)		
				-

	Spon re-performing this test, did the band pass filters perform properly?
C	Circle one: Yes No
1 t	If yes, note in the space below, what was done to correct the problem.
C	Corrective Action(s)
- -	
-	
	If no, complete a Problem/Failure Report, Form N, and noti

***NOTE: Be prepared to describe the specific problem(s).

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 0.5 MHz HIGH PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
250.00 kHz	O
300.00 kHz	O
350.00 khz	O
400.00 kHz	3.9
450.00 kHz	7.8
500.00 kHz	7.8 14.1
550.00 kHz	18.8
600.00 kHz	19.5
650.00 kHz	<u>20.3</u>
700.00 kHz	21.1
750.00 kHz	21.1
850.00 kHz	21.9
950.00 kHz	21.9
1.00 MHz	21.9

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 4.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
1.00 MHz	21.9
1.50 MHz	21.9
2.00 MHz	22.7
2.50 MHz	21.1
3.00 MHz	19.5
3.50 MHz	18.0
4.00 MHz	
4.50 MHz	2.3
5.00 MHz	
5.50 MHz	
6.00 MHz	0
6.50 MHz	0
7.00 MHz	

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 8.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
5.00 MHz	90.5
5.50 MHz	82.0
6.00 MHz	73.4
6.50 MHz	60.9
7.00 MHz	45.3
7.50 MHz	<u> </u>
8.00 MHz	7.8
8.50 MHz	
9.00 MHz	6.3
9.50 MHz	3.1
10.00 MHz	2.3
10.50 MHz	1.6
11.00 MHz	0

BAND PASS FILTER VERIFICATION TEST

DAT	Έ:	10 March 89	system serial numbe SA51865	R:
OPE	RATO		OSCILLOSCOPE SERIAL U-BOO 340/	NUMBER:
	IFIE	D BY:	WAVE FORM GENERATOR SERIAL NUMBER:	
SOE	TWAR	RE VERSION NUMBER:	<u>U-B03348</u>	
1)	COM	PLETE THE FOLLOWING C	•	OMPLETED INITIALS)
	a)		Instruments, 2022C to the Remote Pulser	BSC
	b)	Intraspect 9836 APS	is in A-scope mode	<u> 25C </u>
	c)		lse is being sent into	BSC
	d)		being obtained of the	35C
	e)	Gain is set to 17.0	dB	BSC
	f)	Record frequency ver incrementing the fre 5 of this form)	quency up (page 3, 4, &	BSC
2)	Did	d the band pass filter	s perform properly?	
	Cir	ccle one: Yes No		
	Ιf	yes, proceed to A/D c	onvertor verification test	•
	tes	no, verify that all c st are properly hooked ow, which filter(s) f	onnections unique to this up, and note in the space ailed.	verification provided
	Fai	led Band Pass Filter(s)	

3)	Upon re-performing this test, did the band pass filters perform properly?
	Circle one: Yes No
	If yes, note in the space below, what was done to correct the problem.
	Corrective Action(s)
	If no, complete a Problem/Failure Report, Form N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe the specific problem(s).

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 0.5 MHz HIGH PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
250.00 kHz	
300.00 kHz	2.3
350.00 khz	4.7
400.00 kHz	
450.00 kHz	25.0
500.00 kHz	50.0
550.00 kHz	<u> 78.8</u>
600.00 kHz	88.3
650.00 kHz	88.3
700.00 kHz	86.0
750.00 kHz	86.7
850.00 kHz	88.3
950.00 kHz	89.0
1.00 MHz	89.8

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 4.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
1.00 MHz	90.6
1.50 MHz	91.4
2.00 MHz	88.3
2.50 MHz	88.3
3.00 MHz	85.9
3.50 MHz	82.0
4.00 MHz	56.3
4.50 MHz	9.4
5.00 MHz	
5.50 MHz	0
6.00 MHz	
6.50 MHz	
7.00 MHz	

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 8.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
5.00 MHz	23.8 75.0
5.50 MHz	75.0
6.00 MHz	71.9
6.50 MHz	20.3
7.00 MHz	68.0
7.50 MHz	60.2
8.00 MHz	50.8
	18.8
8.50 MHz	5.5
9.00 MHz	3.5
9.50 MHz	
10.00 MHz	0
10.50 MHz	
11.00 MHz	

BAND PASS FILTER VERIFICATION TEST

OPE	ERATO	SA-51867 OR: OSCILLOSCOPE S SA-51867 U WAVE FORM GENE SERIAL NUMBER:	SERIAL NUMBER: -B00340 ERATOR
1)	COM	MPLETE THE FOLLOWING CHECK LIST:	COMPLETED (INITIALS)
	a)	Connect the Marconi Instruments, 2022C Wave Form Generator to the Remote Pulser Preamplifier (RPP)	<u>BSC</u>
	b)	Intraspect 9836 APS is in A-scope mode.	<u>BSC</u>
	c)	A continuous wave pulse is being sent int the RPP	<u>BSC</u>
	d)	A signal response is being obtained of th A-scope.	e 35L
	e)	Gain is set to 17.0 dB	BC
	f)	Record frequency versus amplitude when incrementing the frequency up (page 3, 4, 5 of this form)	BSC
2)	Did	the band pass filters perform properly?	
	Cir	cle one: Yes No	
	If	yes, proceed to A/D convertor verification	test.
	tes	no, verify that all connections unique to the are properly hooked up, and note in the sow, which filter(s) failed.	this verificatior space provided
	Fail	led Band Pass Filter(s)	
		·	

3)	Upon re-performing this test, did the band pass lifters perform properly?					
	Circle one: Yes No					
	If yes, note in the space below, what was done to correct the problem.					
	Corrective Action(s)					
	If no, complete a Problem/Failure Report, Form N, and notify MTI Electronic Maintenance.					

***NOTE: Be prepared to describe the specific problem(s).

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 0.5 MHz HIGH PASS FILTER

FREQUENCY	AMPLITUDE RESP	ONSE
250.00 kHz	Φ	O .O
300.00 kHz	φ	<u>0</u> .0
350.00 khz	<u></u>	<u>3</u> .4
400.00 kHz	4.7	<u>10.a</u>
450.00 kHz	12.2	<u> </u>
500.00 kHz	47	43.8
550.00 kHz	73.4	<u>5</u> 9.4
600.00 kHz	<u> 570</u>	64.1
650.00 kHz	48.4	65.6
700.00 kHz	35.2	<u>68</u> ,0
750.00 kHz	21.2 100	<i>6</i> 8.8
850.00 kHz	460	70.3
950.00 kHz	46.C	72.7
1.00 MHz	97.0	74.2

BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 4.0 MHz LOW PASS FILTER

FREQUENCY	AMPLITUDE RESPONSE
1.00 MHz	89.0 95.0 74.2
1.50 MHz	40.0 67.0 74.2
2.00 MHz	<u> 85.€ 35.€</u> 74.⊋
2.50 MHz	676 670 719
3.00 MHz	66.0 100,0 71.1
3.50 MHz	100 0 100.0 68.0
4.00 MHz	100 88.0 51.0
4.50 MHz	100.0 10.4 7.0
5.00 MHz	1.6 0.0
5.50 MHz	<u> </u>
6.00 MHz	0. 0.0
6.50 MHz	0.0
7.00 MHz	0.0
,	

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BAND PASS FILTER VERIFICATION TEST AMPLITUDE VERSUS FREQUENCY RESPONSE 8.0 MHz LOW PASS FILTER

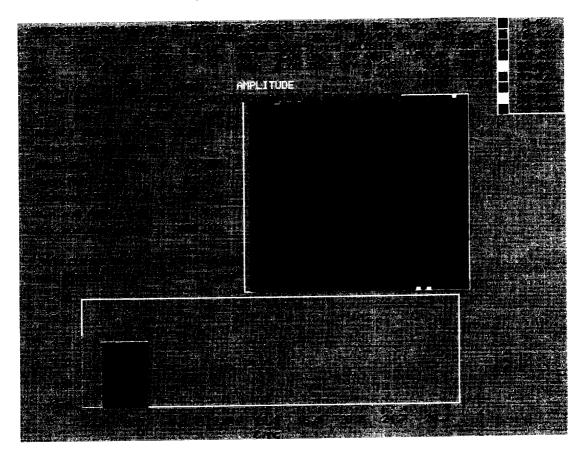
FREQUENCY	AMPLITUDE RES	AMPLITUDE RESPONSE		
5.00 MHz	<u>100.€</u>	69.0		
5.50 MHz	100.0	<u>6</u> 8.8		
6.00 MHz	100.C	<u>6</u> 8.0		
6.50 MHz	100 O	<u>68.8</u>		
7.00 MHz	100.0	<u>6</u> 8.0		
7.50 MHz	100.0	<u>6</u> 8.0		
8.00 MHz	83.6	<u>5</u> 7.8		
8.50 MHz	_ 38.0-	17.2		
9.00 MHz	7.0	5.5		
9.50 MHz	3,0	0.0		
10.00 MHz	<u> </u>	0.0		
10.50 MHz	0	0.0		
11.00 MHz	-0	0.0		

A/D CONVERTER VERIFICATION TEST

DAT	'E:	2/7/89	SYSTEM SERIA		BER:
OPE	RATO	R:	VERIFIED BY		
SOF	TWAR	E VERSION NUMBER:	- Y Same	1	
1)	COM	PLETE THE FOLLOWING CHECK	LIST		COMPLETED (INITIALS)
	a)	Set A/D converter sampling 20 MHz			n.f.h
	b)	Set sampling increment to	0.10 in		-1. fek
	c)	Set Y-axis stepper motor maximum.			ofte dirt
	d)	Place system in data acqu	uisition mode.		- filip
	e)	A-scan gate delay at 9.0	microseconds		-nfilip
	f)	A-scan gate width at 50.0) microseconds		1/h/h
	g)	C-scan gate delay at 41.0) microseconds		a feligy
	h)	C-scan gate width at 15.0) microseconds	• • • •	<u> </u>
2)	Has	the C-scan presentation b	peen accurately	displ	ayed?
	Cir	cle one: Yes No			
	it	yes, make a hard copy of to this form, and proceed ts.	the screen preso to the transduc	entati cer ve	on, attach rification
	If re-	no, make a hard copy prese verify above check lists,	entation of the and re-perform	scree scan.	n display,
3)	Has	the C-scan presentation b	peen accurately	displ	ayed?
	Cir	cle one: Yes No			

	If yes, note in the space below what was done to correct the problem, and proceed to the Transducer Verification Tests.
	If no, make a hard copy presentation of the screen, and begin incrementing upward using the system default values, until a properly digitized signal is obtained. Proceed to step 4.
	CORRECTIVE ACTION(S)
1)	If a properly digitized wave form is not obtained with any of the system default values, complete a Failure/Problem Report, FORM N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe specific problem(s).
5)	Note in the space below, what sampling rate provided an acceptable digitized wave (both A and C scan form). Attach hard copy of the screen presentation to this form.
	ACCEPTABLE SAMPLING RATE: 20 MHz@ 2.0"/sec.
5)	ATTACH HARD COPY HERE

A/D Converter Verification Test Form D



Sampling Rate: 20 MHz Y-Axis Scan Speed: 2.0"/sec.

> ORIGINAL PAGE COLOR PHOTOGRAPH

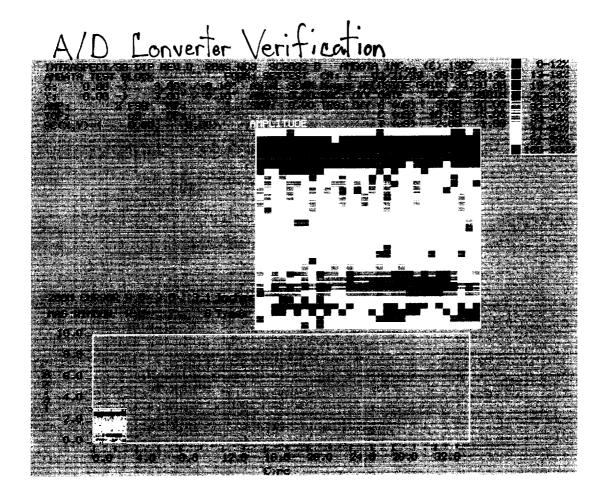
A/D CONVERTER VERIFICATION TEST

DATI	E: اها	Feb 89	_	SYSTEM SERIAL N	UMBER:
OPE	RATO	Brad Cushing		VERIFIED BY:	
SOF	TWAR I	E VERSION NUMBER:			
1)	COM	PLETE THE FOLLOWIN	- G CHECK LI	ST	COMPLETED (INITIALS)
	a)	Set A/D converter 20 MHz	sampling	rate to	. BSL
	b)	Set sampling incr	ement to O	.10 in	. <u>Bsc</u>
	c)	Set Y-axis steppe maximum	r motor ve		. BSC
	d)	Place system in d	ata acquis	ition mode	. BSC
	e)	A-scan gate delay	at 9.0 mi	croseconds	. <u>BSC</u>
	f)	A-scan gate width	at 50.0 m	icroseconds	
	g)	C-scan gate delay	at 41:0 m	icroseconds	. <u>BSC</u>
	h)	C-scan gate width	at 15.0 m	icroseconds	. <u>BSC</u>
2)	Has	the C-scan presen	tation bee	n accurately dis	played?
	Cir	cle one: Yes	No		
	If it tes	yes, make a hard o to this form, and ts.	opy of the proceed to	screen presenta the transducer	tion, attach verification
	If re-	no, make a hard co verify above check	ppy present Lists, an	ation of the scr d re-perform sca	reen display, n.
3)	Has	the C-scan presen	ntation bee	n accurately dis	splayed?
	Cir	cle one: Yes	No		

PRECEDING PAGE BLANK NOT FILMED

PAGE 2 FORM D

	If yes, note in the space below what was done to correct the problem, and proceed to the Transducer Verification Tests.
	If no, make a hard copy presentation of the screen, and begin incrementing upward using the system default values, until a properly digitized signal is obtained. Proceed to step 4.
	CORRECTIVE ACTION(S)
4)	If a properly digitized wave form is not obtained with any of the system default values, complete a Failure/Problem Report, FORM N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe specific problem(s).
5)	Note in the space below, what sampling rate provided an acceptable digitized wave (both A and C scan form). Attach hard copy of the screen presentation to this form.
	ACCEPTABLE SAMPLING RATE:
6)	ATTACH HARD COPY HERE

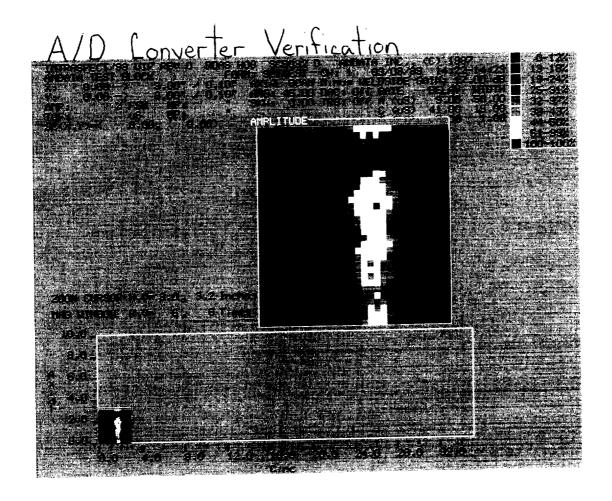


ORIGINAL PAGE COLOR PHOTOGRAPH

A/D CONVERTER VERIFICATION TEST

	RATO	March 8 R: Brad L E VERSION N	UShing	-	SYSTEM SEI SASISO VERIFIED I	55	BER:
1)		PLETE THE FO		CHECK L	IST		COMPLETED (INITIALS)
-,	a)	Set A/D con		sampling			BSC
	b)	Set sampli	ng incre	ement to	0.10 in		BSL
	c)	Set Y-axis maximum.		motor v			356
	d)	Place syst	em in da	ata acqui	sition mode		BSC
	e)	A-scan gat	e delay	at 9.0 m	icroseconds		BBC
	f)	A-scan gat	e width	at 50.0	microsecond	s	BSC
	g)	C-scan gat	e delay	at 41.0	microsecond	s	3.sc
	h)	C-scan gat	e width	at 15.0	microsecond	s	BSC_
2)		the C-scan	present	tation be	en accurate	ly disp	Layed?
	it	yes, make a to this for sts.	hard com, and p	opy of th proceed t	e screen protection to the trans	esentat: ducer ve	ion, attach erification
	If re-	no, make a verify abov	hard cop e check	py preser lists, a	tation of t	he screerm scan	en display,
3)	Has	s the C-scan	presen	tation be	en accurate	ly disp	layed?
	Cir	cle one:	Yes	No			

	If yes, note in the space below what was done to correct the problem, and proceed to the Transducer Verification Tests.
	If no, make a hard copy presentation of the screen, and beging incrementing upward using the system default values, until a properly digitized signal is obtained. Proceed to step 4.
	CORRECTIVE ACTION(S)
4)	If a properly digitized wave form is not obtained with any of the system default values, complete a Failure/Problem Report, FORM N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe specific problem(s).
5)	Note in the space below, what sampling rate provided an acceptable digitized wave (both A and C scan form). Attach hard copy of the screen presentation to this form.
	ACCEPTABLE SAMPLING RATE:
5)	ATTACH HARD COPY HERE

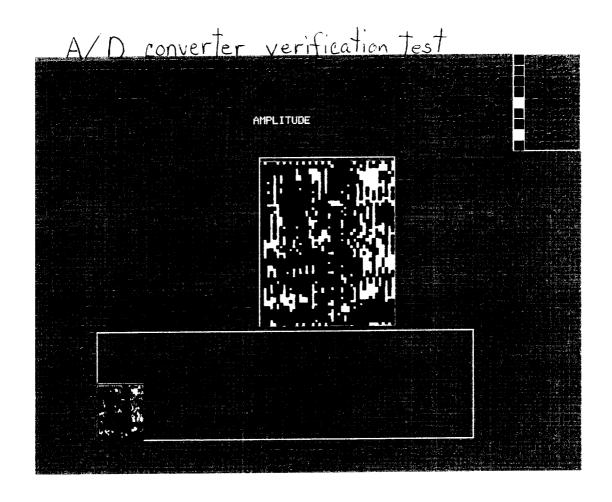


ORIGINAL PAGE COLOR PHOTOGRAPH

A/D CONVERTER VERIFICATION TEST

D AT	E :	SYSTEM SERIAL NUMI	BER:
	RATO	B. Cushing	10/04
SOF	TWAR!	E VERSION NUMBER:	COMPLETED
1)	COM	PLETE THE FOLLOWING CHECK LIST	COMPLETED (INITIALS)
	a)	Set A/D converter sampling rate to 20 MHz.	<u> 350 - </u>
	b)	Set sampling increment to 0.10 in	<u> 1800 – </u>
	c)	Set Y-axis stepper motor velocity to maximum.	<u> </u>
	d)	Place system in data acquisition mode	15.8
	e)	A-scan gate delay at 9.0 microseconds	<u> </u>
	f)	FO O without managed a	
	g)		<u>.75° C</u>
	h)	· · · · · · · · · · · · · · · · · · ·	12°C
2)	Has	the C-scan presentation been accurately displ	ayed?
		ccle one: Yes No	
	it tes	yes, make a hard copy of the screen presentati to this form, and proceed to the transducer ve sts.	rillcacion
	If re-	no, make a hard copy presentation of the scree verify above check lists, and re-perform scan.	n display,
3)	Has	s the C-scan presentation been accurately displ	ayed?
	Cir	ccle one: Yes No	

	If yes, note in the space below what was done to correct the problem, and proceed to the Transducer Verification Tests.
	If no, make a hard copy presentation of the screen, and beging incrementing upward using the system default values, until a properly digitized signal is obtained. Proceed to step 4.
	CORRECTIVE ACTION(S)
)	If a properly digitized wave form is not obtained with any of the system default values, complete a Failure/Problem Report, FORM N, and notify MTI Electronic Maintenance.
	***NOTE: Be prepared to describe specific problem(s).
)	Note in the space below, what sampling rate provided an acceptable digitized wave (both A and C scan form). Attach hard copy of the screen presentation to this form.
	ACCEPTABLE SAMPLING RATE:
)	ATTACH HARD COPY HERE



ORIGINAL PAGE COLOR PHOTOGRAPH

TRANSDUCER VERIFICATION TESTS

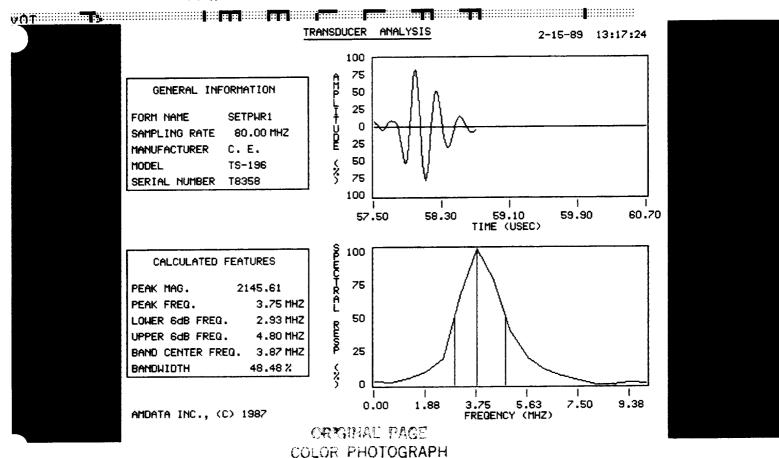
DATE	Ε:	z/15/89	SYSTEM SERIAL NUM	
OPE	RATOF	,	TRANSDUCER SERIAL	
		BY:	SOFTWARE VERSION	NUMBER:
_\Y	. ,	will.		
1)	Does	s the vendor's Transducer Charac tain the following:	teristic Analysis	Sheet
			Check i	f Listed
				/
				$-\sqrt{L}$
	a)	Customer name		
	b)	Date performed		\sim \sim \sim
	c)	Analyst performing the test		
	d)	Target material		NO
	e)	Water travel distance		1/02
	f)	Peak frequency		
	g)	Band width center frequency		√_
	h)	Band width center frequency Band width at -6 dB		Ni
	i)	Sensitivity (Loop Gain)		
	j)	Sensitivity (Loop Gain)		
	k)	Photograph of oscilloscope O Frequency spectrum		ivi
		O RF envelope		
		Pulser/receiver used		
	1)	Oscilloscope used		
	m)	Spectrum analyzer used		
	n)	Excitation voltage used		V/
	0)	Attenuation used		
	p)	Vertical scale description (dB	and volts)	N.C.
	d)	Horizontal scale description (1	frequency	
	r)	and time)		
	_	Gain used		
	s)	Band width used		
	t)	Transducer type		
	u)	Transducer type Transducer serial number		$=$ $\sqrt{/}$
	v)	Active area		
	w)	Type and length of cable used		<u></u>
	х)	Water couplant temperature		
	Y)	Sampling rate	• • • • • • • • • • • • • • • • • • • •	
	2)	Sampling rate		

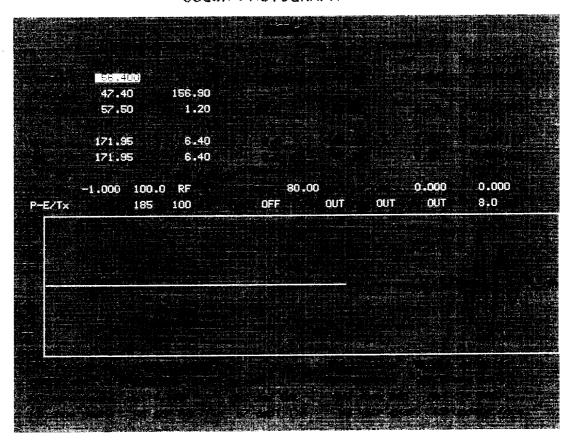
2)	Was there any damage seen to the transducer whi the visual examination?	le performing
	Circle one: Yes (No)	
	If no, proceed to step 3 of this form.	
	If yes, note in the space below what type of da Send transducer back to vendor.	mage was seen.
	Observed Damage to Transducer	
3)	Complete the Following Check List	Completed (Initials)
	a) 3 in. x 3 in. x 1 in. glass block on bottom of immersion tank	· <u>B</u> C
	b) At least six inches of water is covering the glass block target	
	c) Transducer is connected to Z-axis arm of immersion tank	2.2
	d) Transmitting face of transducer is parallel to target material	. <u>Be</u>
	e) Transducer is connected to the URBIS	20C
	f) Transducer face is 4 inches above the target material	30
	g) Inspection system is in A-scope mode	7.6
4)	Verify if water temperature is between 68° and 8 Note measured temperature below.	32° Fahrenheit.
	Measured Temperature: 78°F	
5)	Pulse the system and adjust the gain so the firs back-wall reflection is at 80 percent full screen Note the gain needed.	t complete n height.
	Gain Reading: 10.0 d 8.0 d B	
		CTP-0100 Page 46

6)	Does in house transducer characteristic analysis match vendor analysis?
	Circle one: Yes No
	If yes, attach the hard copy presentation of the analysis to this form and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
	If no, note in the space below what conditions were rejectable.
	Rejectable Conditions The rejectable Condition does not reside with the I-98 transducer analysis software, but do to how quality fubrication of the transducer itself.
7)	Did the in house transducer characteristic analysis match the vendor's sheet on the retry?
	Circle one: Yes No
	If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
	Actions Taken to Correct Problem
	If no, complete a Problem/Failure Report, FORM N. Notify the vendor, send the transducer, copy of the Problem/Failure Report, and a copy of the in house analysis back to the vendor.

	·

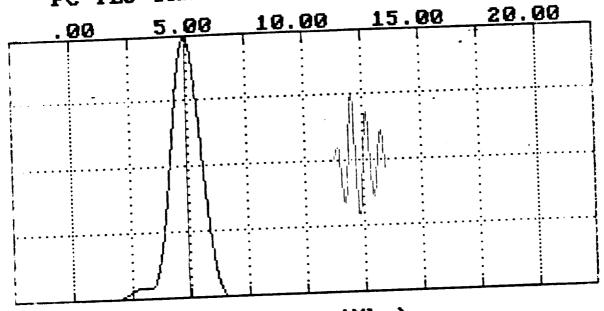
TRANSDUCER ANALYSIS TEST





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TRANSDUCER EVALUATION REPORT PC-TES



(Mhz) power spectrum

waveform na alla Bibilla

MORTHOL

Test Date: JUL 1, 1987	(14:30:28) Report Date	: JUL 1, 1987 (14:22:41)
Model : 5052PR c: 4: # : PR 887	SERETUES PARAMETERS	Damping : 0 HF Filt.: OUT BF Filt.: N/A
Model : TS-196 Sectal # : T8358 #	TRANSDUCER PARAMETERS Diameter : .750 Center Freq. : 5.0 MHZ	Shoe Type : N/A Couplant : WATER
to an extended to	FEATURES	ength (usec): .800 Analytic Envelope
Fig. 1. Spectrum Low Eds (Mhz): 4.141 High EdR(Mhz): 5.703 Fig.cen (Mhz): 4.922 Nandwidth (%): 31.746 Fig.peak (Mhz): 4.922 or slew : 1.000	lime Waveform Abs peak amp : 60.0000 Sens (dB): 53.845 Dmpg 1/3 (dB): 1.370 Dmpg 2/4 (dB): 1.514	Rise-10 (usec): .715 Wid-10 (usec): .725 Wid-25 (usec): .500 Wid-60 (usec): .500 Fell-10 (usec): .450

CERTIFIED BY 17.0. Q.A.

Power Systems Combustion Engineering, Inc. 1000 Prospect Hill Road Post Office Box 500

(203) 688-1911 Telex: 99297

Windsor Connecticut 06095-0500

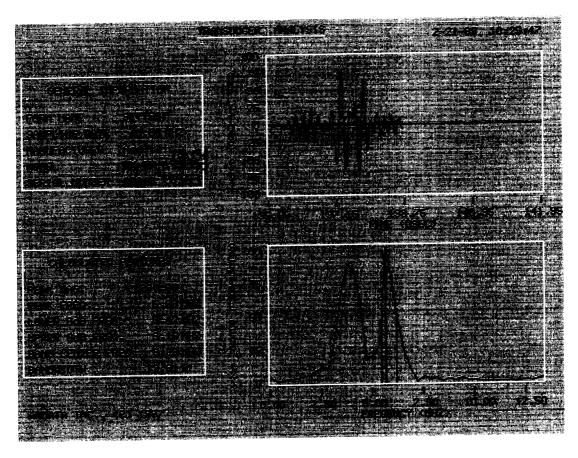
TRANSDUCER VERIFICATION TESTS

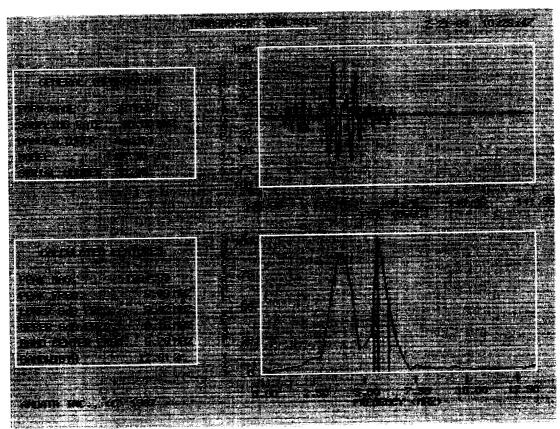
DA.	re:	21 Feb 89	SYSTEM SERIAL N	IUMBER:
OPI	ERAT	DR: B. Cushing	TRANSDUCER, SERI	AL NUMBER:
VEF	RIFIE	ED BY: 1	SOFTWARE VERSIO	
		J. Karner.	4.0	M MOMBER:
1)	Doe cor	es the vendor's Transducer Charact ntain the following:	eristic Analysi	s Sheet
			Check	if Listed
	a)	Customer name		V -
	b)	Vendor performing the test		
	c)	Date performed	•••••	
	d)	Analyst performing the test	• • • • • • • • • • • • •	
	e)	Target material		
	f)	Water travel distance		Ng
	g)	Peak frequency	• • • • • • • • • • • • •	$\overline{}$
	h)	Band width center frequency		
	i)	Band width at -6 dB	• • • • • • • • • • • • • • • • • • • •	<u>N6</u>
	j)	Sensitivity (Loop Gain)	• • • • • • • • • • • • •	<u></u>
	k)	Photograph of oscilloscope		. /
		O Frequency spectrum		
	1)	O RF envelope Pulser/receiver used	• • • • • • • • • • • • • • • • • • • •	
	m)		• • • • • • • • • • • • • • • • • • • •	
	n)	Spectrum analyzer used	• • • • • • • • • • • • • • •	<u> </u>
	0)	Excitation voltage used	• • • • • • • • • • • • • •	
	p)	Attenuation used		- 100
	q)	Vertical scale description (dB ar	nd volts)	<u></u>
	r)	Horizontal scale description (fre	equency	
		and time)		\checkmark
	s)	Gain used		
	t)	Band width used		
	u)	Transducer type		
	v)	Transducer serial number		
	w)	Active area		NO
	x)	Type and length of cable used	• • • • • • • • • • • • • • • • • • • •	Ng
	A)	Water couplant temperature		
	z)	Sampling rate	• • • • • • • • • • • • • • • • • • • •	

2)	Was there any damage seen to the transducer while the visual examination?	performing
	Circle one: Yes No	
	If no, proceed to step 3 of this form.	
	If yes, note in the space below what type of damage Send transducer back to vendor.	·
	Observed Damage to Transducer	
		Completed
3)	Complete the Following Check List	(Initials)
	a) 3 in. x 3 in. x 1 in. glass block on bottom of immersion tank	<u> </u>
	b) At least six inches of water is covering the glass block target	<u>O.K.</u>
	c) Transducer is connected to Z-axis arm of immersion tank	J.K
	d) Transmitting face of transducer is parallel to target material	<u> </u>
	e) Transducer is connected to the URBIS	(J.K.
	f) Transducer face is 4 inches above the target material	J.K.
	g) Inspection system is in A-scope mode	J.K
4)	Verify if water temperature is between 68° and 82 Note measured temperature below.	° Fahrenheit.
	Measured Temperature: 76 0F	
5)	the gain so the first	complete h height.
	Gain Reading: 12 db	
		CTP-0100 Page 46

Does in house transducer characteristic analysis match vendor analysis?
Circle one: Yes No
If yes, attach the hard copy presentation of the analysis to this form and proceed to the verification test of the electromate interference shielding of data acquisition cables.
If no, note in the space below what conditions were rejectable.
Rejectable Conditions The rejectable condition does not reside with the I-98 transducer analysis software. It is due to Low quality tabrication of the transducer itself.
Did the in house transducer characteristic and
Did the in house transducer characteristic analysis match the vendor's sheet on the retry? Circle one: Yes No
Circle one: Yes No If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electrons.
Circle one: Yes No If yes, note in the space below what was done to correct the
Circle one: Yes No If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
Circle one: Yes No If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
Circle one: Yes No If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.



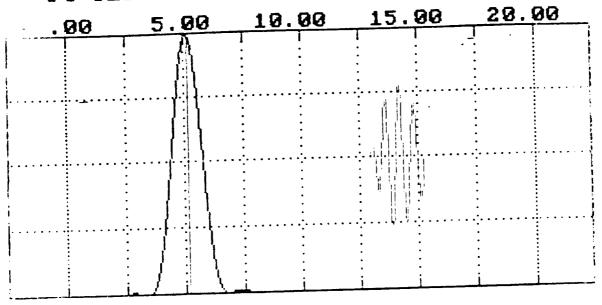




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PRINTERING

PC-TES TRANSDUCER EVALUATION REPORT



--- power spectrum (Mhz)

MORTHOL

Nest Date: Jun 77. 1987 (14:11:55) ——— Refort Date: Jun: 70. 1987 (14:14:15) PULSER FELETVER FHAMMETERS ըaտբյոց: 4 Energy : 1 : 5052೯೪ HE Filt.: Dol 1 2 2 2 2 bain (db) : Zw Atten.(d2): Zw ±86131 # : ₱87889 BE Filt.: N'e TRANSDUCER PARAMETERS Shoe Type : N/A Diameter : .750 model : T5-196 Couplant : WATER Center Freq. : 5.0 MHZ DATA COLLECTION PARAMETERS .800 Gate length (usec): Samo Fate (Mhz): **4**0.000 FEATURES Amalytic Enteroper Time Waveform Rise-10 (uSec): Time Wave+orm

Abe peak amp : 70.000

Sens (dB): 54.758 .

Impg 1/7 (dF : 1.748

Dmpg 2/4 (dB): 1.488 - Her Spectrum High OdB (Mhz): 4.075 Fricen (Mhz): 5.117 Wid-25 (USec): Fricen (Mhz): Wid-of (uSes): Fandwidth (%): 29.006 Fall-10(uSec/: Folgean (Mhz): 5.150 5.80 : 1.111

Q.A. DATE 6/30
DATE 7/1

Power Systems
Combustion Engineering, Inc.

1000 Prospect Hill Goad Post Office Box 500 Windsor, Connectcut 06095-0500 (203) 688-1911 Telex: 99297

B-69

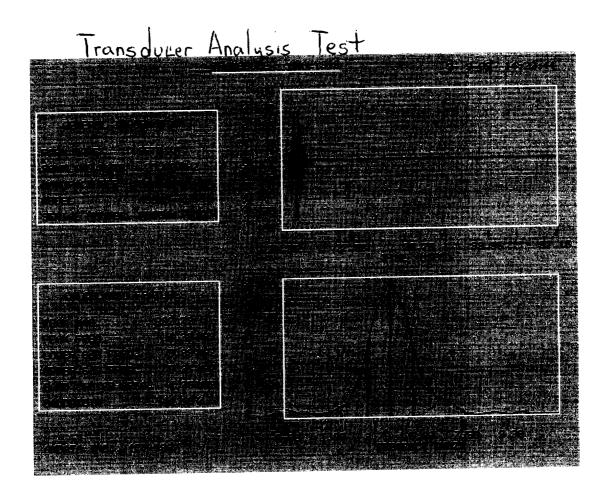
TRANSDUCER VERIFICATION TESTS

DAI	E:	9 March 89	SYSTEM SERIAL NUMBER:
OPE	RATO	DR: O I I	TRANSDUCER SERIAL NUMBER:
		Buck Carring	<u>(₹1) = 3 (Т8364)</u>
VER	RIFIE	CD BY:	SOFTWARE VERSION NUMBER:
1)		es the vendor's Transducer Charac stain the following:	teristic Analysis Sheet
			Check if Listed
	a)	Customer name	
	b)	Vendor performing the test	
	c)	Date performed	
	ď)	Analyst performing the test	
	e)	Target material	· · · · · · · · · · · · · · · · · · ·
	f)	Water travel distance	
	g)	Peak frequency	
	h)	Band width center frequency	
	i)	Band width at -6 dB	
	j)	Sensitivity (Loop Gain)	
	k)	Photograph of oscilloscope	·
		O Frequency spectrum	
		O RF envelope	
	1)	Pulser/receiver used	
	m)	Oscilloscope used	
	n)	Spectrum analyzer used	<u>NO</u>
	0)	Excitation voltage used	<u>No</u>
	p)		· · · · · · · · · · · · · · · · · · ·
	q)	Vertical scale description (dB)	
	r)	Horizontal scale description (f	
		and time)	
	s)	Gain used	
	t)		· · · · · · · · · · · · · · · · · · ·
	u)		· · · · · · · · · · · · · · · · · · ·
	V)	Transducer serial number	
	w)	Active area	
	х)	Type and length of cable used	
	A)	Water couplant temperature	
	2)	Sampling rate	V

	cle one: Yes No	
		~a waa saan
If y Send	yes, note in the space below what type of damaged transducer back to vendor.	ge was seen
Obse	erved Damage to Transducer	
•	and the second s	Completed (Initials)
	plete the Following Check List	(1111 01111)
a)	3 in. x 3 in. x 1 in. glass block on bottom of immersion tank	1350
b)	At least six inches of water is covering the glass block target	<u> 7556 </u>
c)	Transducer is connected to Z-axis arm of immersion tank	Pisc_
d)	Transmitting face of transducer is parallel to target material	BK
e)	Transducer is connected to the URBIS	PSC_
f)	Transducer face is 4 inches above the target material	P.) C
g)	Inspection system is in A-scope mode	100
Not	ify if water temperature is between 68° and 82° e measured temperature below.	° Fahrenhe
	sured Temperature:	
bac Not	se the system and adjust the gain so the first k-wall reflection is at 80 percent full screen the gain needed.	complete h height.
Gai	n Reading: 1816	
		CTP-01 Page 4

PAGE 3 FORM E

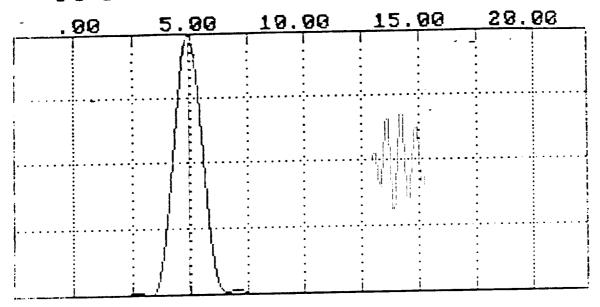
Does in house transducer characteristic analysis match ve analysis?	ndor
Circle one: Yes No	
If yes, attach the hard copy presentation of the analysis this form and proceed to the verification test of the elements interference shielding of data acquisition cables.	to ctromad
If no, note in the space below what conditions were rejec	table.
Rejectable Conditions The rejectable condition does not reside with the I-98 transducer analysis software. It is due to Low quality fabrication of the transducer itself.	-
Did the in house transducer characteristic analysis match the vendor's sheet on the retry?	
Circle one: Yes No	
If yes, note in the space below what was done to correct to problem, and proceed to the verification test of the elect netic interference shielding of data acquisition cables.	he romag-
Actions Taken to Correct Problem	
	_
	-
If no, complete a Problem/Failure Report, FORM N. Notify the vendor, send the transducer, copy of the Problem/Failu	



ORIGINAL PAGE COLOR PHOTOGRAPH

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PC-TES TRANSDUCER EVALUATION REPORT



--- power spectrum (Mhz)

MORTHOL

Tast Date: JUN 30.	1937 (14:53:34 Ae	opno Base: Jun Tv. 1937 (19:50:10
nton. : 5051FA 	PULSER RECEIVER FAR Enemg. : 1 Gein (db) : 29 Atten.(db): 20	ದಿಕಗಳುಗಳ ಕರ್ಕ ಆಗ್ರಕ್ಷಚರ್ಶಕ ೧೮೪
Model : TS-196	TRANSDUCER PARAME Diameter : Center Freq. :	.750 Shoe Type : N/A
o er Paha (Mho)	FEATURES	Gate length (usec):
acime-1. 5	.219 Abs dee: amo : + .625 Sens (d2): 5 .922 Dmoq 1/3 (d5): .571 Dmoq 2: + (d2): .922	9.000 Fise-10 tubes:

Q.A. Comment DATE 6/30/8

Power Systems Combustion Engineering, Inc. 1000 Prospect Hill Road Post Office Box 500

Windsor, Connecticut 06095-0500

(203) 686-1911 Teex: 99297

TRANSDUCER VERIFICATION TESTS

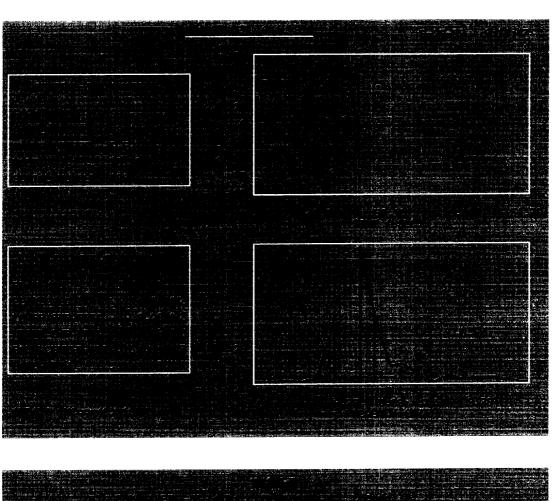
rad	E:		SERIAL NUMBER:
OPE	RATO	TOR: TRANSDI	JCER SERIAL NUMBER:
		B. Cushina Ri	<u>VD -3 (T835H)</u>
VER	RIFIE	IED BY: / SOFTWAI	RE VERSION NUMBER:
		2000 10 10 10 10 10 10 10 10 10 10 10 10	4.0
		7 / 1	
1)		pes the vendor's Transducer Characteristic ontain the following:	c Analysis Sheet
			Check if Listed
	a)	Customer name	\checkmark
	b)		
	c)		
	ď)		
	e)		
	f)		
	g)	Peak frequency	
	h)		· · · · · · · · · · · · · · · · · · ·
	i)		
	j)		· · · · · · · · · · · · · · · · · · ·
	k)	Photograph of oscilloscope	
		O Frequency spectrum	<u>No</u>
		O RF envelope	
	1)		
	m)		
	n)	•	
	o) p)	_	
	d)		
	r)		
	- ,	and time)	
	s)		
	t)		
	u)		
	v)	Transducer serial number	
	w)	Active area	· · · · · · · · · · · · · · · · · · ·
	x)		
	у)		
	z)	Sampling rate	· · · · · · · · ·

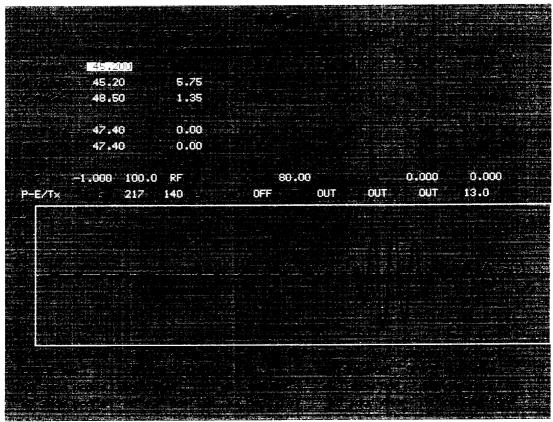
2)	Was there any damage seen to the transducer while the visual examination?	periorming
	Circle one: Yes No	
	If no, proceed to step 3 of this form.	
	If yes, note in the space below what type of damage Send transducer back to vendor.	
	Observed Damage to Transducer	
3)	Complete the Following Check List	Completed (Initials)
	a) 3 in. x 3 in. x 1 in. glass block on bottom of immersion tank	<u> 35C</u>
	b) At least six inches of water is covering the glass block target	BSC
	c) Transducer is connected to Z-axis arm of immersion tank	<u>BSC</u>
	d) Transmitting face of transducer is parallel to target material	BSC
	e) Transducer is connected to the URBIS	BSC_
	f) Transducer face is 4 inches above the target material	BSC
	g) Inspection system is in A-scope mode	RSC_
4)	Note measured temperature below.	2° Fahrenheit
	Measured Temperature: 75°F	
5)	Pulse the system and adjust the gain so the first back-wall reflection is at 80 percent full screen Note the gain needed.	t complete n height.
	Gain Reading: 13.0 db	
		CTP-0100 Page 46

PAGE 3 FORM E

6)	Does in house transducer characteristic analysis match vendor analysis?
	Circle one: Yes (No)
	If yes, attach the hard copy presentation of the analysis to this form and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
	If no, note in the space below what conditions were rejectable.
	Rejectable Conditions The reproable condition does not reside with the I-98 transducer analysis software but due to low quality fabrication of transducer itself.
7)	Did the in house transducer characteristic analysis match the vendor's sheet on the retry?
	Circle one: Yes No
	If yes, note in the space below what was done to correct the problem, and proceed to the verification test of the electromagnetic interference shielding of data acquisition cables.
	Actions Taken to Correct Problem
	If no, complete a Problem/Failure Report, FORM N. Notify the vendor, send the transducer, copy of the Problem/Failure Report, and a copy of the in house analysis back to the vendor.

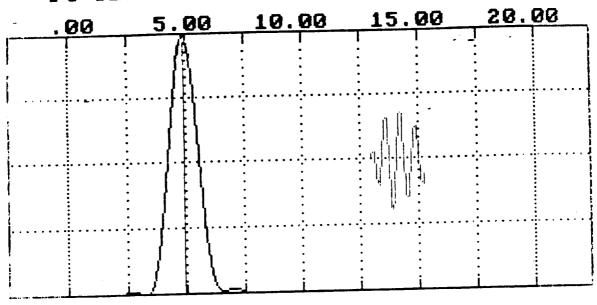
ORIGINAL PAGE COLOR PHOTOGRAPH





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PC-TES TRANSDUCER EVALUATION REPORT



power spectrum (Mhz)

MORTHOL

Test Date: JUN 30, 1987	(14:57:34) Report Date	: JUN Jo. 1937 (1-:50:17
ерог. : 5052PA -:-:aj # : FR/B85	PULSER/RECEIVER FARAMETERS Energy : 1 Gain (dE) : 20 Atten/(dB/: 20	Demp:ng : 4 HF Filt.: Ou: BF Filt.: N/A
Model : TS-196	TRANSDUCER PARAMETERS Diameter : .750 Center Freq. : 5.0 MHZ	Shoe Type : N/A Couplant : WATER
Composition (Mhz): - Lower Spectrum Low 3dP (Mhz): 4.219 High 3dB (Mhz): 5.625 Forcen (Mhz): 4.922 Randwidth (%): 28.571 Forces (Mhz): 4.922 Horizon: 1.000	FEATURES Time Wave+orm Abs pear amp : 49.000 Sens (d0): 51.660 Dmpg 1/3 (d0): 1.289 Dmpg 2/4 (d1): 1.394	Analytic Envelope Rise-10(uSec): .750 Wid-10 (uSec): .750 Wid-25 (uSec): .750 Wid-60 (uSec): .550 Fall-10(uSec): .405

CERTIFIED BY Ra Q.A.

Power Systems Combustion Engineering, Inc. 1000 Prospect Hill Road Post Office Box 500 Windsor, Connecticut 06095-0500 (203) 688 1911 Telex: 99297

B-81

ELECTROMAGNETIC INTERFERENCE SHIELDING DATA ACQUISITION CABLE VERIFICATION TEST

DAT	E:	2/17/89			SERIA:	L NUMBER:
	TAGE	H A A	-	CABLE	I.D. N	
		VING ON:		TRANSD	UCER SI	ERIAL NUMBER
		D'BY:	<u>.</u> -	SOFTWA	RE VER	SION NUMBER:
1)	COM	IPLETE CHECK LIST BEFOR	RE PROCEEDING	G WITH	VERIFIC	CATION TEST
	a)	SYSTEM IS CONNECTED CLINES AS AUTOCLAVE(S)		TRICAL		completed (initials)
	b)	5.0 MHz TRANSDUCER IS	BEING USED			<u>35C</u>
	c)	SYSTEM IS IN THE A-SC	OPE MODE	• • • • • •		BSC
	d)	PEAK DETECTING OFF EI BACK-WALL REFLECTION	GHT MULTIPLE			BSC
	e)	SIGNAL RESPONSE IS SE OFF A BONDED REGION	T TO 35% FSH			10C
2)	STA	TE THE TIME THE AUTOCL	AVE CYCLING	BEGAN:		
3)		E SIGNAL RESPONSE EVER VIDED BELOW.	Y HOUR ON TH	E HOUR	IN THE	SPACE
	10	TIME 100 100 100 200	<u> 35</u> 342	4	NSE (%	FSH)

4) DID SIGNAL RESPONSE VARY BY MORE THAN 10% AT ANY TIME DURING THE TEST?

CIRCLE ONE: YES NO

IF NO, PROCEED TO Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST.

IF YES, NOTE IN THE SPACE PROVIDED BELOW, THE TIME(S) AT WHICH THIS DEVIATION OCCURRED.

TIME	SIGNAL RESPONSE

ALSO COMPLETE A PROBLEM/FAILURE REPORT, FORM N. NOTIFY MTI ELECTRONIC MAINTENANCE OF THE DISCREPANCY.

***NOTE: BY PLACING THE INSPECTION SYSTEM IN THE VICINITY OF THE AUTOCLAVES REPRESENTS THE WORST CASE ELECTRONIC ENVIRONMENT THAT THE SYSTEM WILL EXPERIENCE.

*Note: System was run was dung dung and charle operation. ALSC System.

was exposed to to to to Interference were in tense eccito magnetic. Interference by placing a magnetic yoke on various imponents of the system various imponents of the system on the umbilical cobeling.

No change in signal response was

Page 49

ELECTROMAGNETIC INTERFERENCE SHIELDING DATA ACQUISITION CABLE VERIFICATION TEST

DAT	E:	22 21 1.15 89		SYSTE:	M SERI 51868	IAL NUMBER:
	RATO	Bud Colons		CABLE	I.D.	NUMBER:
IS	RUNN	OF LINE SYSTEM NING ON:			DUCER	SERIAL NUMBER
VER	IFIE	D BY:				CRSION NUMBER:
1)	COM	PLETE CHECK LIST BEFORE I	PROCEEDING	WITH	VERIF	ICATION TEST
	a)	SYSTEM IS CONNECTED ON S	SAME ELECT	RICAL.		COMPLETED (INITIALS)
	,	LINES AS AUTOCLAVE(S) .				BSC
	b)	5.0 MHz TRANSDUCER IS BE	ING USED			<u> 1300</u>
	c)	SYSTEM IS IN THE A-SCOPE	MODE		• • • • • • • •	BUC
	d)	PEAK DETECTING OFF EIGHT BACK-WALL REFLECTION	MULTIPLE			<u> 13,000</u>
	e)	SIGNAL RESPONSE IS SET TOFF A BONDED REGION	O 35% FSH			2
2)	STA	TE THE TIME THE AUTOCLAVE	CYCLING E	BEGAN:		
3)	NOTE PROV	E SIGNAL RESPONSE EVERY H VIDED BELOW.	OUR ON THE	E HOUR	IN T	HE SPACE
		TIME A() A() A() A()	\$1GNAL 36 30 30	RESPO	NSE (9	% FSH)

4)	DID SIGNAL RESPONSE VA	ARY BY MORE	THAN 10%	AT ANY	TIME	DURING
	CIRCLE ONE: YES	NO				
	IF NO, PROCEED TO Y-AX VERIFICATION TEST.	XIS TRANSDU	CER POSIT	'IONING	ACCURA	ACY
	IF YES, NOTE IN THE SINGLE WHICH THIS DEVIATION (PACE PROVID	ED BELOW,	THE TI	ME(S)	AT
	TIME	s	IGNAL RES	PONSE		

ALSO COMPLETE A PROBLEM/FAILURE REPORT, FORM N. NOTIFY MTI ELECTRONIC MAINTENANCE OF THE DISCREPANCY.

***NOTE: BY PLACING THE INSPECTION SYSTEM IN THE VICINITY OF THE AUTOCLAVES REPRESENTS THE WORST CASE ELECTRONIC ENVIRONMENT THAT THE SYSTEM WILL EXPERIENCE.

Note - System was run during autoclave operation.

However it was also exposed to E.M.I by

means of a magnetic yoke. This had

no affect on sional response.

ELECTROMAGNETIC INTERFERENCE SHIELDING DATA ACQUISITION CABLE VERIFICATION TEST

VOI IS	RUNI	March 89 OR: Brad Lushing E OF LINE SYSTEM VING ON: ED BY: MPLETE CHECK LIST BEFORE PROCEED	SOFTWARE VER	UMBER: 13 SERIAL NUMBER RSION NUMBER:
-,	001	HELL CHECK HIST BEFORE PROCEED	ING WITH VERIFI	CATION TEST
	a)	SYSTEM IS CONNECTED ON SAME ELILLINES AS AUTOCLAVE(S)	ECTRICAL	completed (initials)
	b)	5.0 MHz TRANSDUCER IS BEING USI	ED	BSC
	c)	SYSTEM IS IN THE A-SCOPE MODE		BSC
	d)	PEAK DETECTING OFF EIGHT MULTIE BACK-WALL REFLECTION	PLE	BSC
	e)	SIGNAL RESPONSE IS SET TO 35% E	SH	BSC
2)	STA'	TE THE TIME THE AUTOCLAVE CYCLIN	IG BEGAN:	
3)	NOT!	E SIGNAL RESPONSE EVERY HOUR ON VIDED BELOW.	THE HOUR IN THE	E SPACE
		TIME 920 020 120	AL RESPONSE (% 35.9 36.1 36.1 36.1	FSH)

	SIGNAL TEST?	RESPONSE			MORE	THAN	10%	ΑT	ANY	TIME	DURING
CIRC	CLE ONE	YES	NO)							

IF NO, PROCEED TO Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST.

IF YES, NOTE IN THE SPACE PROVIDED BELOW, THE TIME(S) AT WHICH THIS DEVIATION OCCURRED.

TIME	SIGNAL RESPONSE

ALSO COMPLETE A PROBLEM/FAILURE REPORT, FORM N. NOTIFY MTI ELECTRONIC MAINTENANCE OF THE DISCREPANCY.

***NOTE: BY PLACING THE INSPECTION SYSTEM IN THE VICINITY OF THE AUTOCLAVES REPRESENTS THE WORST CASE ELECTRONIC ENVIRONMENT THAT THE SYSTEM WILL EXPERIENCE.

* Note: System was run during autoclave operation.

However it was also exposed to intense
electromagnetic interference by placing a
magnetic yoke by system components and
cabeling. This had no affect on signal
response.

ELECTROMAGNETIC INTERFERENCE SHIELDING DATA ACQUISITION CABLE VERIFICATION TEST

VOL IS	TAGE RUNN	DR: B. Lushing E OF LINE SYSTEM VING ON: LO ED BY: 123/89	RNI	NUMBER: (AMW2493) SERIAL NUMBER
1)	COM	PLETE CHECK LIST BEFORE PROCEEDING	NG WITH VERIF	ICATION TEST
	a)	SYSTEM IS CONNECTED ON SAME ELECTIONES AS AUTOCLAVE(S)	CTRICAL	completed (INITIALS)
	b)	5.0 MHz TRANSDUCER IS BEING USED)	BSC
	c)	SYSTEM IS IN THE A-SCOPE MODE .	• • • • • • • • • • • • • • • • • • • •	BSC
	d)	PEAK DETECTING OFF EIGHT MULTIPL BACK-WALL REFLECTION		BSC
	e)	SIGNAL RESPONSE IS SET TO 35% FS OFF A BONDED REGION	н	BSC
2)	STA	TE THE TIME THE AUTOCLAVE CYCLING	BEGAN:	
3)	NOT	E SIGNAL RESPONSE EVERY HOUR ON TO VIDED BELOW.	HE HOUR IN TH	E SPACE
	6	1200 <u>35</u>	.2	(FSH)

4)	DID SIGNAL RESPONSE VARY BY MORE THAN 10% AT ANY TIME DURING THE TEST?
	CIRCLE ONE: YES (NO)
	IF NO, PROCEED TO Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST.
	IF YES, NOTE IN THE SPACE PROVIDED BELOW, THE TIME(S) AT

TIME	SIGNAL RESPONSE

WHICH THIS DEVIATION OCCURRED.

ALSO COMPLETE A PROBLEM/FAILURE REPORT, FORM N. NOTIFY MTI ELECTRONIC MAINTENANCE OF THE DISCREPANCY.

***NOTE: BY PLACING THE INSPECTION SYSTEM IN THE VICINITY OF THE AUTOCLAVES REPRESENTS THE WORST CASE ELECTRONIC ENVIRONMENT THAT THE SYSTEM WILL EXPERIENCE.

Note - System was run during autoclave operation.

However it was also exposed to intense E.M.I.

by placing a magnetic yoke near system

components and cabeling. This had no effect

on signal response.

Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

	E: 2	17/89	SYSTEM SERIAL 5-A5-1866	
OPER	RATO		TRANSDUCER SEI	RIAL NUMBER:
		D BY:	13-176	
	<u> </u>	<u> </u>		
,		PLETE THE FOLLOWING CHECK LIST BE	FORE PERFORMIN	NG TEST
	SEQ	ALICE .		COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USED	• • • • • • • • • • • • • • • • • • • •	-//k
	b)	20.0 in. LONG SCANNER ARM IS CON TO AMAPS 2090 SCANNER	NECTED	<u> </u>
	c)	SAMPLING INCREMENT IS 0.10 in.		-n/h
	d)	FIGURE 1 OF THIS FORM HAS BEEN R AS SO PROPER TEST SET-UP IS ACHI		mph.
	e)	ENCODERS HAVE BEEN ZEROED AT STA	RT LOCATION	- 1/h -
	f)	THE AMAPS 2090 SCANNER HAS BEEN MOVE 16.0 in. IN THE +Y DIRECTION		nf.h.
2)	PERE	FORM TEST THREE TIMES AND RECORD	RESULTS IN SPA	ACE BELOW.
		INDICATED Y-AXIS ACTUAL POSITION POSI		DELTA
	RUN	1 /6.4 /5.		0.8
	RUN	2 /h.c	2	0.8
	RUN	3 <u>/6.c</u> <u>15</u>	<u>Z</u>	0.8

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL VALUES WERE WITHIN 0.1 INCH, PROCEED TO X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST.

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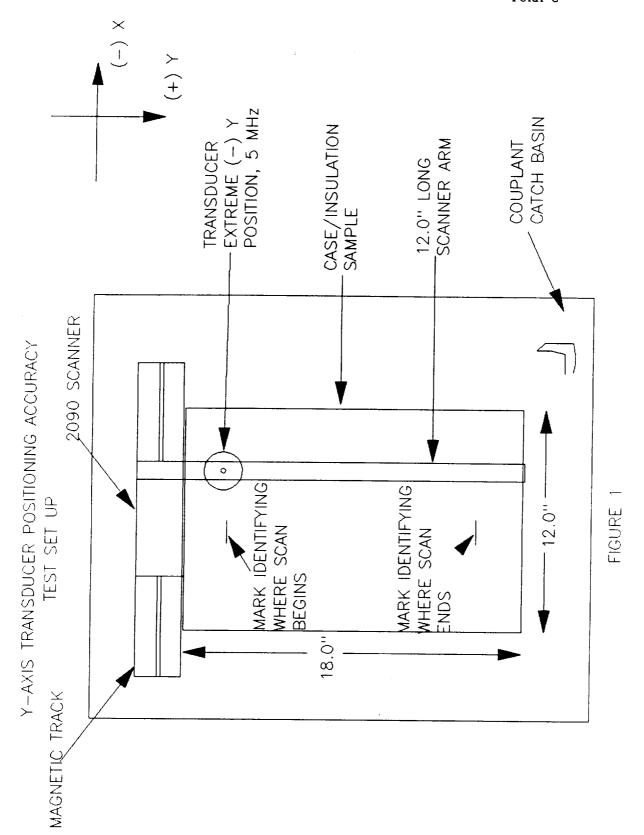
(3 CONT.) IF ANY OF THE RUNS FAILED, RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO THE FORM, RE-PERFORM TEST. RECORD RESULTS BELOW.

			INDICATED Y-AXIS POSITION	ACTUAL Y-AXIS POSITION	DELTA
	RUN	1	Mr. C		
	RUN	2	160	_/6.1	<u> </u>
	RUN	3	/h.c		<u> </u>
1)	WHA TRA	SITI AT W ANSD	ONS ARE WITHIN 0.1 AS DONE TO CORRECT UCER POSITIONING A	CCURACY VERIFICATION T	TO X-AXIS
		RREC	TIVE ACTION(S)	CHANGED RESULA	TEK UNITE
		jūc	II, until so call	the partial tow	Edeb Genner

IF THE DIFFERENCE BETWEEN THE TWO READINGS ARE STILL OUT OF TOLERANCE, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

Scalate 121d 5-451868 8

***NOTE: BE PREPARED TO GIVE SPECIFIC INFORMATION CONCERNING THIS PROBLEM.



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Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

DAT	21	Fel	89				SYSTEM SEI SA-51	868		
OPE	RATO	R: B	Lush	ing			TRANSDUCER		RIAL NUMBER	ł:
VER	IFJEI			_	•					
	- 10	<u>~~.</u>	7							
1)				FOLLOWI	NG CHECK	LIST BE	FORE PERF	ORMI	NG TEST	
	SEQU	JENC!	Ŀ.						COMPLETED (INITIALS)	
	a)	5.0	MHz T	'RANSDUC	ER IS BEI	ING USED	·		BSC	
	b)			LONG SC 2090 SC	ANNER ARM		INECTED		BSC	
	c)	SAM	PLING	INCREME	NT IS 0.1	lO in.		• •	BSC	
	d)				FORM HAS				BSL	
	e)	ENC	ODERS	HAVE BE	EN ZEROEL	AT STA	ART LOCATIO	ON	BSC	
	f)			in. IN	CANNER HA		PROGRAMED	TO	BSC	
2)	PERI	FORM			IMES AND	RECORD	RESULTS IN	N SP	ACE BELOW.	
		:		TED Y-A	XIS		Y-AXIS TION		DELTA	
*	RUN	1		0"		Sam	1.6		0	
	RUN	2		0"		San	ne		0	
	RUN	3	,——	O'		Sam	16		0	
3)	WERE	E WIT	THIN O Y VERI	.1 INCH FICATIO	, PROCEED N TEST.	TO X-A		OUCE	R POSITIONI	
* -	Scar Ran The	pa scar end	rametern three	ers are e times ach sca	0"-5" y and noted in.	and C Juhere	y = 5"X at	t.10 was	increments CTP-010 at Page 50	0

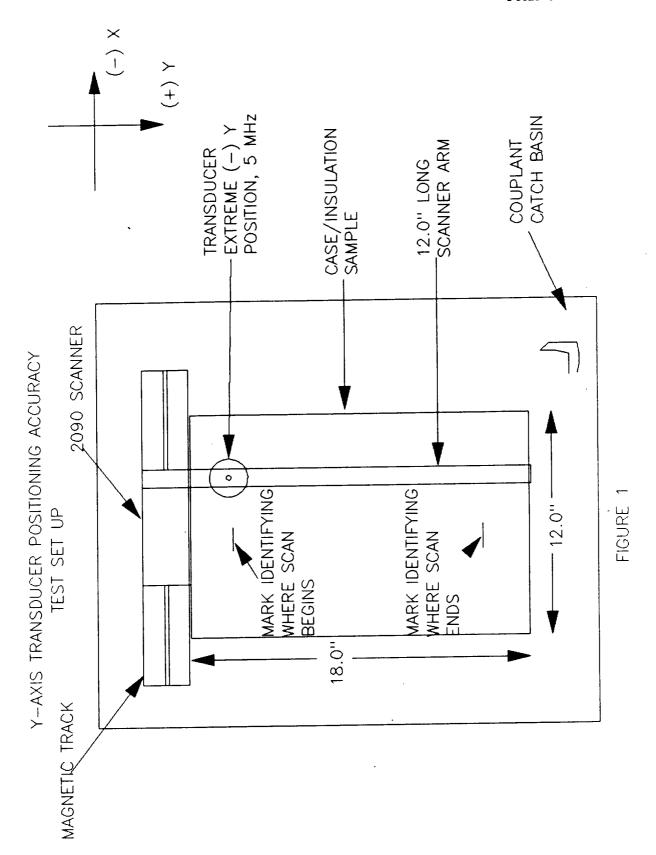
(3	CONT.) IF	ANY	OF	THE	RUNS	FA:	ILED,	RE-	CHECK	ALI	CONN	ECTIONS
	AND '	VALUE	ES E	NTE	RED	INTO	THE	FORM,	RE-	-PERF	ORM	TEST.	RECORD
	RESU	LTS E	BELO	W.									

	INDICATED Y-AXIS POSITION	ACTUAL Y-AXIS POSITION	DELTA
RUN 1			
RUN 2			
RUN 3			
POSITI WHAT W TRANSD	ONS ARE WITHIN 0.1 I AS DONE TO CORRECT T	THE INDICATED AND AC NCH, RECORD IN THE S HE PROBLEM. PROCEED URACY VERIFICATION T	PACE BELOW TO X-AXIS

IF THE DIFFERENCE BETWEEN THE TWO READINGS ARE STILL OUT OF TOLERANCE, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE SPECIFIC INFORMATION CONCERNING THIS PROBLEM.

FORM G



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Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

	TE:	Brad Cushing	SYSTEM SERIAL NUMBER: SA51865 TRANSDUCER SERIAL NUMBER RD-3
1)	COM SEQ	PLETE THE FOLLOWING CHECK LIST B.	EFORE PERFORMING TEST
			COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USE	D <u>35</u> C
	b)	20.0 in. LONG SCANNER ARM IS CONTO AMAPS 2090 SCANNER	NNECTED BSC
	c)	SAMPLING INCREMENT IS 0.10 in.	35C
	d)	FIGURE 1 OF THIS FORM HAS BEEN IN AS SO PROPER TEST SET-UP IS ACH!	REVIEWED BEVED
	e)	ENCODERS HAVE BEEN ZEROED AT STA	art location BSC
	f)	THE AMAPS 2090 SCANNER HAS BEEN MOVE 16.0 in. IN THE +Y DIRECTIO	PROGRAMED TO BSC
2)	PERI	FORM TEST THREE TIMES AND RECORD	RESULTS IN SPACE BELOW.
			L Y-AXIS ITION DELTA
	RUN	1 16.0" 16.0	" None
	RUN	2 <u>16.0°</u> <u>16.0°</u>	D" None
	RUN	3 <u>16.0</u> " <u>16.0</u>	0" None

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL VALUES WERE WITHIN 0.1 INCH, PROCEED TO X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST.

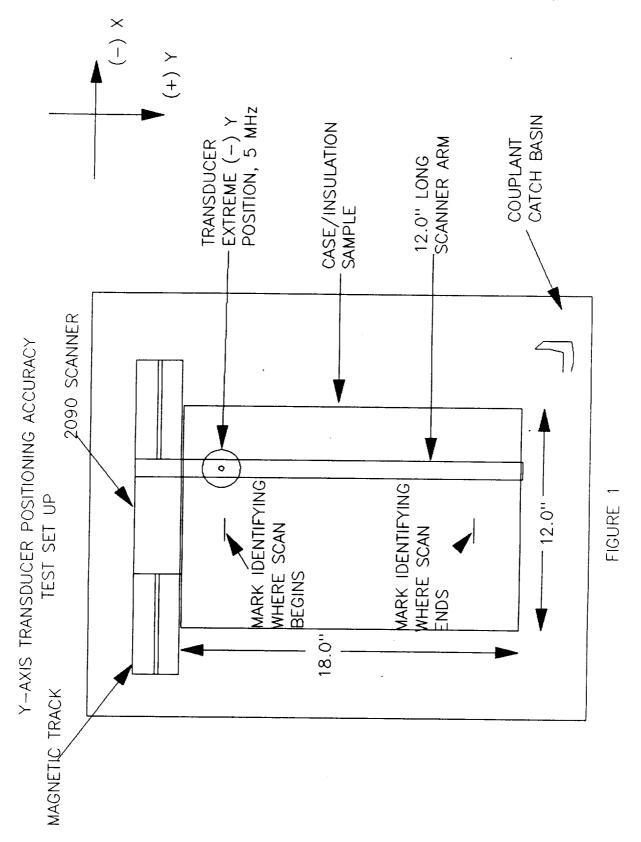
ND VALU	ES ENTE	THE RUN RED INTO	S FAILED, THE FORM	RE-CHECK A	ALL CONNECTIONS RM TEST. RECORD
1	ND VALU	NT.) IF ANY OF ND VALUES ENTE ESULTS BELOW.	ND VALUES ENTERED INTO	ND VALUES ENTERED INTO THE FORM	NT.) IF ANY OF THE RUNS FAILED, RE-CHECK AND VALUES ENTERED INTO THE FORM, RE-PERFORESULTS BELOW.

			INDICATED Y-AXIS POSITION	ACTUAL Y-AXIS POSITION	DELTA
	RUN	1			
	RUN	2			
	RUN	3 .			
4)	PO WH. TR	SITI AT W ANSD	DIFFERENCE BETWEEN ONS ARE WITHIN 0.1 I AS DONE TO CORRECT T UCER POSITIONING ACC	NCH, RECORD IN THE S HE PROBLEM. PROCEED URACY VERIFICATION	TO X-AXIS

IF THE DIFFERENCE BETWEEN THE TWO READINGS ARE STILL OUT OF TOLERANCE, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE SPECIFIC INFORMATION CONCERNING THIS PROBLEM.

FORM G



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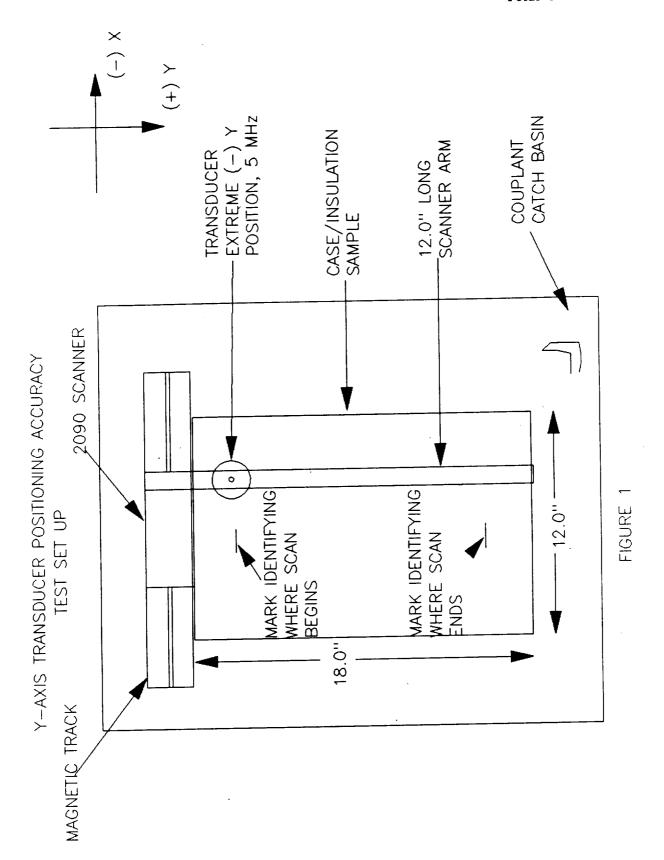
PAGE 1 FORM G

Y-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

DATE		May Sci		ERIAL NUMBER:
	FIEL	B. Biching	RND = 3	
1)		LETE THE FOLLOWING CHECK LIST BE JENCE.	EFORE PERFORM	ING TEST COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USEI	·	BAC
	b)	20.0 in. LONG SCANNER ARM IS CONTO AMAPS 2090 SCANNER		<u> </u>
	c)	SAMPLING INCREMENT IS 0.10 in.		<u> 3550</u>
	d)	FIGURE 1 OF THIS FORM HAS BEEN I AS SO PROPER TEST SET-UP IS ACH:	REVIEWED	Psc/C
	e)	ENCODERS HAVE BEEN ZEROED AT STA	ART LOCATION	<u> 24 - </u>
	f)	THE AMAPS 2090 SCANNER HAS BEEN MOVE 16.0 in. IN THE +Y DIRECTION	PROGRAMED TO	<u> 35C </u>
2)	PER	FORM TEST THREE TIMES AND RECORD	RESULTS IN S	PACE BELOW.
		11/1010111100 1 111111	L Y-AXIS ITION	DELTA
	RUN	1 160 16		<u> </u>
	RUN	2 16.6 16		
	RUN	3		
3)	WER	THE DIFFERENCE BETWEEN THE INDIC E WITHIN 0.1 INCH, PROCEED TO X- URACY VERIFICATION TEST.	ATED AND ACTU AXIS TRANSDUC	JAL VALUES CER POSITIONING

(3	AND VA	IF ANY OF THE RUNS FALUES ENTERED INTO THE S BELOW.	AILED, RE-CHECK ALL E FORM, RE-PERFORM T	CONNECTIONS EST. RECORD
		INDICATED Y-AXIS POSITION	ACTUAL Y-AXIS POSITION	DELTA
	RUN 1			
	RUN 2		-	
	RUN 3			
4)	POSITION WHAT WATER	DIFFERENCE BETWEEN TOONS ARE WITHIN 0.1 IN AS DONE TO CORRECT THUS JUBBLE TO ACCU	ICH, RECORD IN THE SI IE PROBLEM. PROCEED	PACE BELOW TO X-AXIS EST.
	TOLERAN	DIFFERENCE BETWEEN T ICE, COMPLETE A PROBL MTI ELECTRONIC MAINT	EM/FAILURE REPORT, I	STILL OUT OF FORM N, AND
	***NOTE	: BE PREPARED TO GIV	E SPECIFIC INFORMATI	ON CONCERNING

THIS PROBLEM.



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X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

DAT	re:	2/7/89		EM SERIAL NUMBER:
OPE	ERATOR	: 1/2 Trib-		SDUCER SERIAL NUMBER:
VEF	RIFIED	BY:		
1)		LETE THE FOLLOWING (CHECK LIST BEFORE	PERFORMING TEST
				COMPLETED (INTIALS)
	a)	5.0 MHz TRANSDUCER	IS BEING USED	J.K.
	b)	10.0 IN. LONG SCANN TO AMAPS 2090 SCANN	NER ARM IS CONNECT	ED
	c)	SAMPLING INCREMENT	IS 0.10 INCHES .	<u>LK</u>
	d)	SAMPLING RATE IS 20	0.0 MHz	D.K
	e)	FIGURE 1 OF THIS FO SO PROPER TEST SET-		WED
	f)	ENCODERS HAVE BEEN	ZEROED AT START L	OCATION W.K.
	g)	THE AMAPS 2090 SCAN TO MOVE 16.0 INCHES	NER HAS BEEN PROG IN THE +X DIRECT	RAMED J
2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW				
		INDICATED X-AXIS POSITION	RECORDED X-AXI POSITION	S DELTA
	RUN :	16.0	15.97	0.03
	RUN 2	16.0	16.03	0.03
	RUN 3	16.0	16.08	0.08

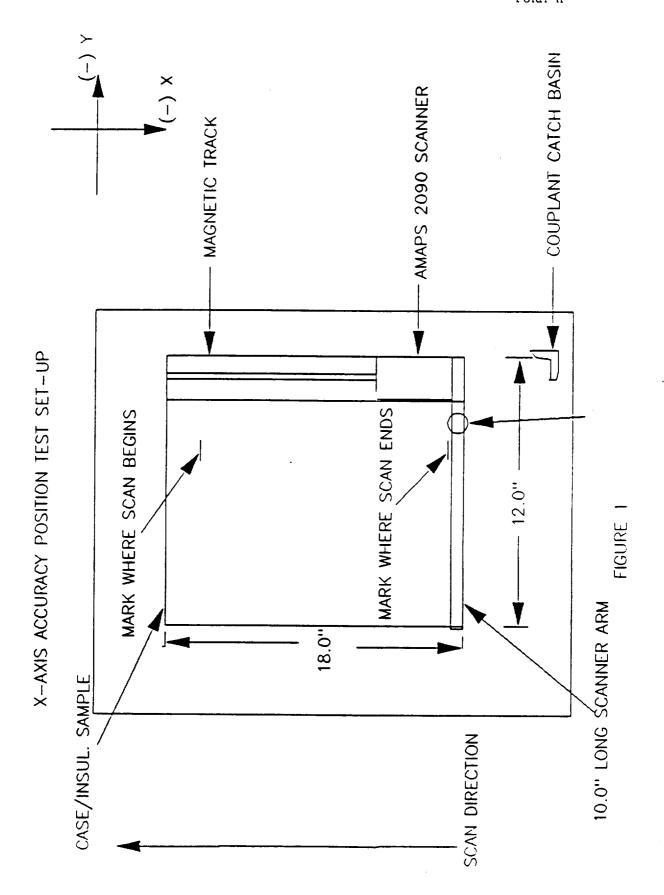
PAGE 2 FORM H

F THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS COSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS CAN VELOCITY VERIFICATION TEST.	F THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXISOSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW THAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS		INDICATED X-AXIS POSITION	ACTUAL X-AXIS POSITION	DELTA
TF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST.	TF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST.	RUN 1			
IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST.	IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST.	RUN 2			<u> </u>
IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL X-AXIS POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST. CORRECTIVE ACTION(S)	POSITIONS ARE WITHIN 0.1 INCH, RECORD IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. PROCEED TO Y-AXIS SCAN VELOCITY VERIFICATION TEST.	RUN 3			

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***NOTE: BE PREPARED TO GIVE SPECIFIC INFORMATION CONCERNING

THIS PROBLEM.



X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

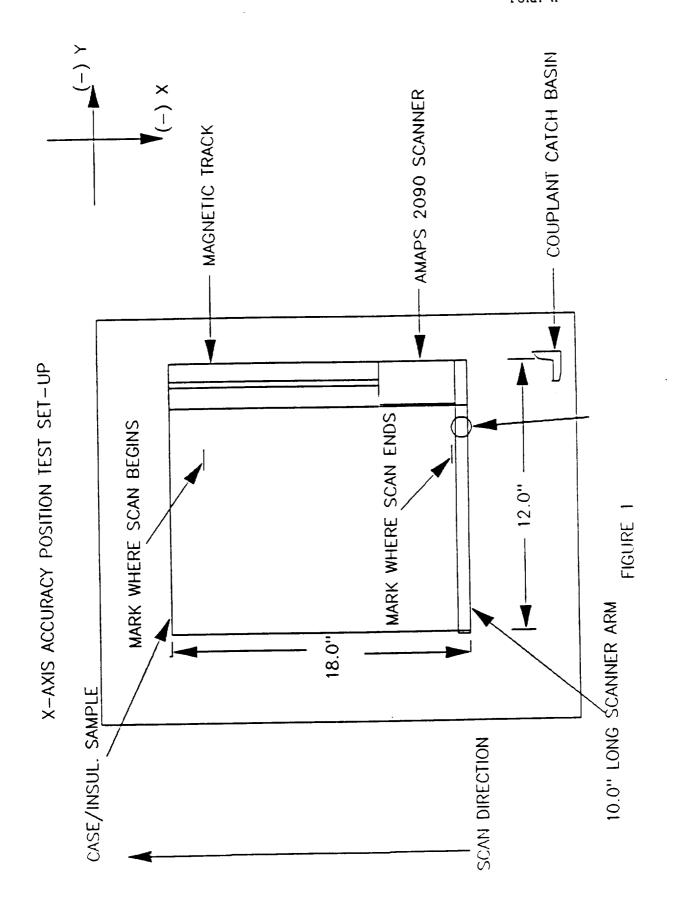
LAC	т: Д	1 Feb 89	SYSTEM SERI SA-51868	
OPE	RATOR			SERIAL NUMBER:
VER	IFIED +	BY!		
1)		LETE THE FOLLOWING CHECK LIST BURNCE.	EFORE PERFOR	MING TEST
	SEÇ			COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING US	ED	BSC_
	b)	10.0 IN. LONG SCANNER ARM IS CONTROL TO AMAPS 2090 SCANNER	ONNECTED	BSC
	c)	SAMPLING INCREMENT IS 0.10 INC	HES	BSC
	d)	SAMPLING RATE IS 20.0 MHz	• • • • • • • • • • • • • • • • • • •	BSC
	e)	FIGURE 1 OF THIS FORM HAS BEEN SO PROPER TEST SET-UP IS ACHIE		BSC
	f)	ENCODERS HAVE BEEN ZEROED AT S	TART LOCATIO	n <u>BSC</u>
	g)	THE AMAPS 2090 SCANNER HAS BEEN TO MOVE 16.0 INCHES IN THE +X		_BSC
2)	PERF	ORM TEST THREE TIMES AND RECORD	RESULTS IN	SPACE BELOW.
		INDICATED X-AXIS RECORDED POSITION POSIT		DELTA
	RUN	1 16.0 16.1		
	RUN	2 16.0 16.1		1
	RUN	3 16.0		

3)	WITHIN O. TEST. IF	FFERENCE BETWEEN THE I INCH, PROCEED TO Y- ANY OF THE RUNS FAII FERED INTO THE MASTER ELOW.	AXIS SCAN VELOCIT	Y VERIFICATION CONNECTIONS AND
		INDICATED X-AXIS POSITION	ACTUAL X-AXIS POSITION	DELTA
	RUN 1			
	RUN 2			1
	RUN 3			
	POSITIONS WHAT WAS D	FERENCE BETWEEN THE ARE WITHIN 0.1 INCH, OONE TO CORRECT THE PRITY VERIFICATION TESTED ACTION(S)	RECORD IN THE SPAROBLEM. PROCEED	ACE BELOW
	THE THREE	FERENCE BETWEEN THE RUNS IS STILL OUT OF PORT, FORM N, AND NO	TOLERANCE COMPLET	TE A PROBLEM/
	***NOTE: B	E PREPARED TO GIVE S	PECIFIC INFORMATIO	ON CONCERNING

X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

TRANSPUCER SERIAL NUMBER VERIFIED BY; 1) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST SEQUENCE. COMPLETED (INITIALS) a) 5.0 MHz TRANSDUCER IS BEING USED b) 10.0 IN. LONG SCANNER ARM IS CONNECTED TO AMAPS 2090 SCANNER c) SAMPLING INCREMENT IS 0.10 INCHES d) SAMPLING RATE IS 20.0 MHz e) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED f) ENCODERS HAVE BEEN ZEROED AT START LOCATION G) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION ZCC PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS POSITION POSITION RUN 1 /6" NOME RUN 2 /6" NOME RUN 2 /6" NOME NOME	DATE	: 0	7 March 89	SYSTEM SERI	AL NUMBER:
TO MOVE 16.0 INCHES IN THE AMAPS 2090 SCANNER HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED TO MOVE 16.0 INCHES IN THE +X DIRECTION TO MOVE 16.0 INCHES AND RECORD RESULTS IN SPACE BELOW. INDICATED COMPLETED (INITIALS) COMPLETED (INITIALS) BSC COMPLETED (INITIALS) COMPLETED (I	OPER	ATOR		TRANSDUCER RD - 3	SERIAL NUMBER
SEQUENCE. COMPLETED (INITIALS) a) 5.0 MHz TRANSDUCER IS BEING USED b) 10.0 IN. LONG SCANNER ARM IS CONNECTED TO AMAPS 2090 SCANNER c) SAMPLING INCREMENT IS 0.10 INCHES d) SAMPLING RATE IS 20.0 MHz e) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED f) ENCODERS HAVE BEEN ZEROED AT START LOCATION g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION INDICATED X-AXIS POSITION RUN 1 16" NGMC NOME	VERI	FIED			
COMPLETED (INITIALS) a) 5.0 MHz TRANSDUCER IS BEING USED	,			FORE PERFOR	MING TEST
b) 10.0 IN. LONG SCANNER ARM IS CONNECTED TO AMAPS 2090 SCANNER c) SAMPLING INCREMENT IS 0.10 INCHES d) SAMPLING RATE IS 20.0 MHz e) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED f) ENCODERS HAVE BEEN ZEROED AT START LOCATION g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION. 2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS POSITION POSITION RUN 1 16" NGME NOME		J			
c) SAMPLING INCREMENT IS 0.10 INCHES d) SAMPLING RATE IS 20.0 MHz e) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED f) ENCODERS HAVE BEEN ZEROED AT START LOCATION g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION 2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS RECORDED X-AXIS POSITION BUILDING BELOW. RUN 1 16" None RUN 2 16" None		a)	5.0 MHz TRANSDUCER IS BEING USE	D	BSC
d) SAMPLING RATE IS 20.0 MHz E) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED f) ENCODERS HAVE BEEN ZEROED AT START LOCATION BSC g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION BSC 2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS RECORDED X-AXIS POSITION DELTA RUN 1 16" NGME RUN 2 16" NOME		b)		NNECTED	BSC
e) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED		c)	SAMPLING INCREMENT IS 0.10 INCH	ES	BSC
f) ENCODERS HAVE BEEN ZEROED AT START LOCATION BSC g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION. 2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS RECORDED X-AXIS POSITION DELTA RUN 1 /6" None RUN 2 /6" None		d)	SAMPLING RATE IS 20.0 MHz		BSC_
g) THE AMAPS 2090 SCANNER HAS BEEN PROGRAMED TO MOVE 16.0 INCHES IN THE +X DIRECTION . BELOW. 2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS RECORDED X-AXIS POSITION DELTA RUN 1 /6" /6" NGME RUN 2 /6" /6" Worl		e)			<u> 38C </u>
TO MOVE 16.0 INCHES IN THE +X DIRECTION PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW. INDICATED X-AXIS RECORDED X-AXIS POSITION POSITION DELTA RUN 1 16" NGME RUN 2 16" NONE		f)	ENCODERS HAVE BEEN ZEROED AT ST	ART LOCATION	N BSC
INDICATED X-AXIS RECORDED X-AXIS POSITION POSITION DELTA RUN 1 16" 16" None RUN 2 16" LOUI WORL		g)	THE AMAPS 2090 SCANNER HAS BEEN TO MOVE 16.0 INCHES IN THE +X D	PROGRAMED IRECTION	BSC
POSITION POSITION DELTA RUN 1 16" 16" None RUN 2 16" 16" Wone	2)	PERF	ORM TEST THREE TIMES AND RECORD	RESULTS IN	SPACE BELOW.
RUN 2 16" 16" None			POSITION POSITI		DELTA
RUN 2 16" 16" None RUN 3 16" 16" None		RUN :			None
RUN 3 16" 16" None		RUN 2	2 16" 16"		None
		RUN :	3 <u>16"</u> <u>16"</u>		None

RESULTS			
	INDICATED X-AXIS POSITION	ACTUAL X-AXIS POSITION	DELTA
RUN 1			
RUN 2			
RUN 3			
WHAT WAS SCAN VEL	DONE TO CORRECT THE OCITY VERIFICATION TE	ST.	TO Y-AXIS
WHAT WAS SCAN VEL	DONE TO CORRECT THE	PROBLEM. PROCEED S	TO Y-AXIS
WHAT WAS SCAN VEL	DONE TO CORRECT THE OCITY VERIFICATION TE	PROBLEM. PROCEED S	TO Y-AXIS
WHAT WAS SCAN VEL	DONE TO CORRECT THE OCITY VERIFICATION TE	PROBLEM. PROCEED S	TO Y-AXIS
WHAT WAS SCAN VEL	DONE TO CORRECT THE OCITY VERIFICATION TE	PROBLEM. PROCEED ST.	ANY ONE OF



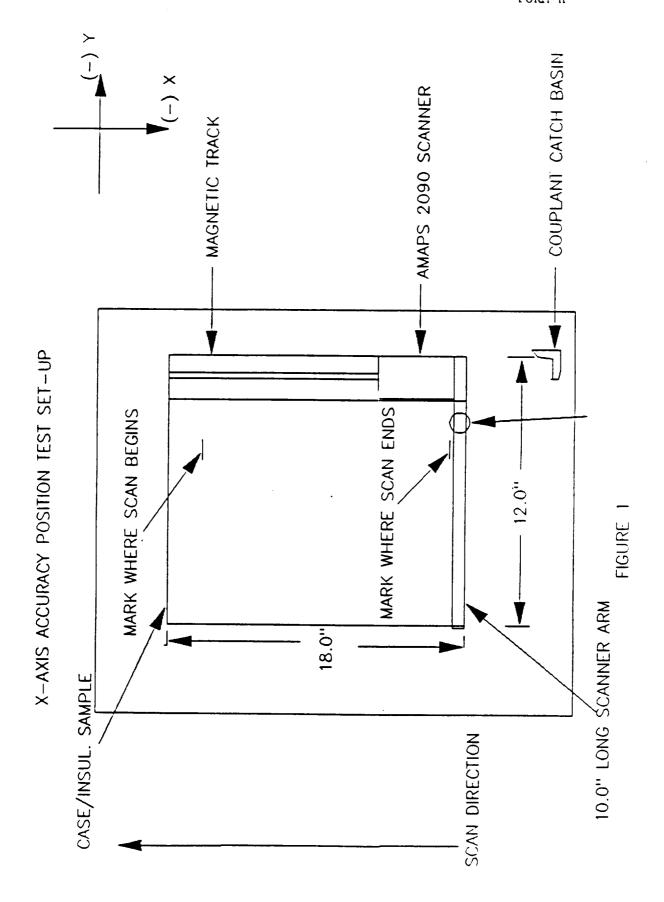
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X-AXIS TRANSDUCER POSITIONING ACCURACY VERIFICATION TEST

DA:	TE:	13 May 29	SYSTEM SER SA 518	RIAL NUMBER:
	ERATOR	B. Cushing		SERIAL NUMBER
VEI	RIFIED	BY: // 5/18/89		
1)	COMP	LETE THE FOLLOWING CHE	CCK LIST BEFORE PERFO	RMING TEST
	~			COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS	BEING USED	· <u>BSC</u>
	b)	10.0 IN. LONG SCANNER TO AMAPS 2090 SCANNER	ARM IS CONNECTED	. <u>BSC</u>
	c)	SAMPLING INCREMENT IS	0.10 INCHES	. <u>BSC</u>
	d)	SAMPLING RATE IS 20.0	MHz	. BSC
	e)	FIGURE 1 OF THIS FORM SO PROPER TEST SET-UP	HAS BEEN REVIEWED IS ACHIEVED	. <u>BSC</u>
	f)	ENCODERS HAVE BEEN ZE	ROED AT START LOCATION	on BSC
	g)	THE AMAPS 2090 SCANNE TO MOVE 16.0 INCHES IN	R HAS BEEN PROGRAMED N THE +X DIRECTION .	B3C
2)	PERF	ORM TEST THREE TIMES A	ND RECORD RESULTS IN	SPACE BELOW.
		INDICATED X-AXIS POSITION	RECORDED X-AXIS POSITION	DELTA
	RUN :	16 C)	16.0	0
	RUN 2	16.0	16.0	C
	RUN 3	16.0	16.0	C

PAGE 2 FORM H

3)	WITHIN O.	FFERENCE BETWEEN THE INCH, PROCEED TO Y-ANY OF THE RUNS FAIR FERED INTO THE MASTER ELOW.	-AXIS SCAN VELOCITY LED. RE-CHECK ALL (CONNECTIONS AND
		INDICATED X-AXIS POSITION	ACTUAL X-AXIS POSITION	DELTA
	RUN 1			
	RUN 2			
	RUN 3			
4)	POSITIONS WHAT WAS I SCAN VELO	FFERENCE BETWEEN THE ARE WITHIN 0.1 INCH DONE TO CORRECT THE DOITY VERIFICATION TEST	, RECORD IN THE SP. PROBLEM. PROCEED	ACE BELOW
	THREE THREE	FFERENCE BETWEEN THE RUNS IS STILL OUT O EPORT, FORM N, AND N	F TOLERANCE COMPLE	TE A PROBLEM/
		BE PREPARED TO GIVE THIS PROBLEM.	SPECIFIC INFORMATI	ON CONCERNING



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Y-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

DATE:	SYSTEM SERIAL NUMBER:
OPERATOR: Bood Crohmo	TRANSDUCER SERIAL NUMBER:
VERIFIED, BY:	STOP WATCH MANUFACTURER:
SOFTWARE VERSION NUMBER:	
PART 1. Y-AXIS SCANNING VELOCITY	VERIFICATION TEST (PEAK DETECT
1) COMPLETE FOLLOWING CHECK LIST	BEFORE PERFORMING TEST.
a) 5.0 MHz TRANSDUCER IS BEIN	COMPLETED (INITIALS)
b) 12.0 IN. LONG SCANNER ARM	IS BEING USED
c) SAMPLING INCREMENT IS 0.10	IN
d) Y-AXIS SCAN VELOCITY IS PR 4.0 IN./SEC	OGRAMED TO
e) A/D SAMPLING RATE IS AT 20	0.0 MHz
f) SYSTEM IS PEAK DETECTING O MULTIPLE BACK-WALL REFLECT	
g) FIGURE 1 OF THIS FORM HAS SO PROPER TEST SET-UP IS A	
h) PRINTER IS CONFIGURED PROP	PERLY
2) PERFORM TEST THREE TIMES AND	RECORD RESULTS IN SPACE BELOW.
TIME	VELOCITY (12.0 IN./TIME)
RUN 1 $\frac{3+3}{3+3} \frac{3.19}{3.19}$	3.13 %.00
RUN 2 $\frac{3.14}{3.14}$ as:	3.15 ¹¹ /266
RUN 3 313	3 1°1 "// .• C

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(PART 1 CONT.)

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

	TIME	VELOCITY (12.0 IN./TIME)
RUN 1		
RUN 2		
RUN 3		
VELOCITII PRESENTA: ATTACH I	ES IS WITHIN ± 0.9 TION IS ACCEPTABLE T TO THIS FORM, NO	THE INDICATED AND ACTUAL SCAN 5 IN./SEC., AND THE SCREEN DATA E, MAKE A HARD COPY OF THE SCREEN, OTE IN THE SPACE BELOW WHAT WAS EM, AND PROCEED TO PART 2 OF THIS
CORRECTIV	VE ACTION(S)	

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	I

PAR	T 2. Y-AXI	S SCANNING VELOCI	TY (PEAK DETECT @ 2.5	IN./SEC.)
1)	COMPLETE F	OLLOWING CHECK LI	ST BEFORE PERFORMING T	EST.
ŕ				COMPLETED (INITIALS)
	a) Y-AXIS 2.5 IN.	SCAN VELOCITY IS /SEC	PROGRAMMED TO	BSC
	b) REMAINI FORM HA	NG PARAMETERS FRO VE NOT BEEN CHANC	OM PART 1 OF THIS	BSC
2)	PERFORM TE	ST THREE TIMES AN	ND RECORD RESULTS IN SI	
		TIME	VELOCITY (12.0 IN.,	TIME)
	RUN 1 _	4.47 sec	2,2 19/500	
	DIIN 2	11.4H 500	2,2 17/500	
			2.7 11/60 C	
	RUN 3	4 4 2 500	X. 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
3)	VELOCITIES	S ARE WITHIN ± 0.1 ON IS ACCEPTABLE ON, ATTACH IT TO	THE INDICATED AND ACTUA 5 IN./SEC., AND THE SCI , MAKE A HARD COPY OF T THIS FORM, AND PROCEE	THE SCREEN
	IF THE DIE ALL CONNEC TEST.	FFERENCE IS GREAT CTIONS AND VALUES	ER THAN ± 0.5 IN./SEC. ENTERED INTO SET FORM	, RE-CHECK . RE-PERFORM
4)	RECORD IN	FORMATION FROM TH	REE RUNS IN SPACE BELO	W .
		TIME	VELOCITY (12.0 IN./TI	
	RUN 1			_
	RUN 2			_
	RUN 3			

COMPLETED

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5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N , AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. Y-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE Y-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a)		(INITIALS)
b)	12.0 IN. LONG SCANNER ARM IS BEING USED	P.C.
c)	SAMPLING INCREMENT IS 0.10 IN	200
d)	Y-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	7,5C
e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
f)	SYSTEM IS IN RF MODE	793C
g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS	7,00
h)	1 pulse width 195 c-scan gate width is 30.0 microseconds	330 ·
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	<u> 2000</u>
j)	PRINTER IS CONFIGURED PROPERLY	<u> 2550 </u>

3)	PERFORM I	TEST THREE	TIMES AN	D RECORD	RESULTS	IN SPAC	CE BELOW.
		TIME		VELOCITY	Y (12.0	IN./TIM	Ξ)
	RUN 1	3.1 sec		3.2 %ec	unable t	o complete	scan
	RUN 2	3.17.sec	<u></u>	3.1 %c	due to	expected	<u>wa</u> ves
	RUN 3	3.16sec		3.1 % cz	exceeded	recieved	mane ? •
4)	VELOCITIE PRESENTAT	FFERENCE BES IS WITHITION IS ACCUMENT TO THE	N ± 0.5 EPTABLE,	IN./SEC. (A) MAK	, AND TH E A HARD	E SCREEI	
	IF THE DI	FFERENCE I	S GREATE UES ENTE	R THAN ± RED INTO	0.5 IN. SET FOR	, RE-CHI M. RE-C	ECK ALL CHECK TEST.
5)	RECORD IN	NFORMATION	FROM THE	THREE R	UNS IN S	PACE BE	LOW.
		TIME	VE	LOCITY (12.0 IN.	/TIME)	
	RUN 1	·					
	RUN 2						
	RUN 3						
6)	VELOCITIE PRESENTAT SCREEN, (BELOW WHA	IFFERENCE B ES IS WITHI TION IS ACC (B) ATTACH AT WAS DONE I OF THIS F	N ± 0.5 EPTABLE, IT TO TH TO CORR	IN./SEC. (A) MAKI	, AND TH E A HARD (C) NOT	E SCREED COPY OF E IN TH	N DATA F THE E SPACE
	CORRECTIV	/E ACTION(S)				
	PRESENTAT	FFERENCE WOLLD OF THE A PROBLEM/	SCREEN FAILURE	DISPLAY.	ATTACH	IT TO T	HIS FORM,
	***NOTE:	BE PREPARE	D TO GIV	E THE SP	ECIFICS	OF THE	PROBLEM.
							CTP-0100 Page 60

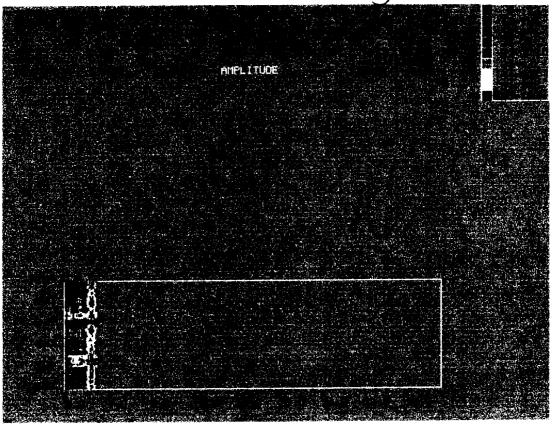
c				CLOCITY (RF MODE @ 2.5 IN. CKLIST BEFORE PERFORMING T	•
	(a)			ITY IS PROGRAMMED TO	COMPLETED (INITIALS)
	(b)			ERS FROM PART 3 OF THIS	
P	ERF	ORM T	EST THREE TIME	S AND RECORD RESULTS IN S	PACE BELOW.
			TIME	VELOCITY (12.0 IN./TIM	E)
	RUN	1	443500	2,25 Marc	
	RUN	2	17.42 5-0	2.26 %	
	RUN	3	11.11/1900	2.23 m/sc	
V: I: (: W: A:	ELOC S AC B) A AS D XIS	CITIE CCEPT ATTAC OONE SCAN	S IS WITHIN ± (ABLE, (A) MAKE H IT TO THIS FO TO CORRECT THE	EN THE INDICATED AND ACTU 0.5 IN./SEC., AND THE SCR A HARD COPY OF THE SCREE ORM, (C) NOTE IN THE SPAC PROBLEM, AND (D) PROCEED FICATION TESTS.	EEN PRESENTATION N PRESENTATION E BELOW WHAT
_					

ł)	RECORD THE	INFORMATION F	ROM THE THREE RUNS IN SPACE BELOW.
		TIME	VELOCITY (12.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
5)	VELOCITIES IS ACCEPTA (B) ATTACH WAS DONE T AXIS SCAN	S IS WITHIN ± OABLE, (A) MAKE H IT TO THIS FO TO CORRECT THE VELOCITY VERIF	IN THE INDICATED AND ACTUAL SCAN 1.5 IN./SEC., AND THE SCREEN PRESENTATION A HARD COPY OF THE SCREEN PRESENTATION, ORM, (C) NOTE IN THE SPACE BELOW WHAT PROBLEM, AND (D) PROCEED TO THE X- FICATION TESTS.
	IF THE DIE PROBLEM/FA MAINTENANG	AILURE REPORT,	FILL UN-RESOLVABLE, (A) COMPLETE A FORM N, AND (B) NOTIFY MTI ELECTRONIC

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

		•

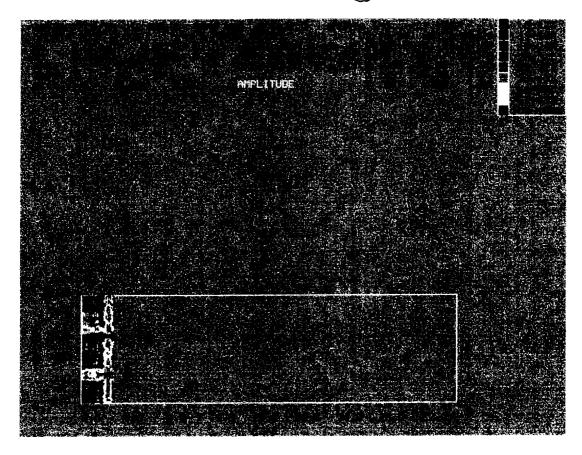
y-Axis Scan Velocity



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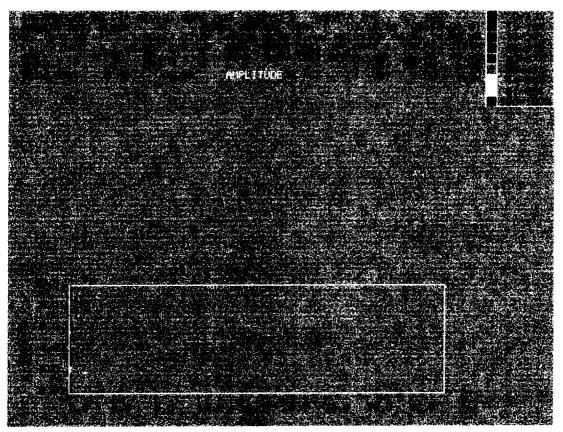
y-Axis Scan Velocity

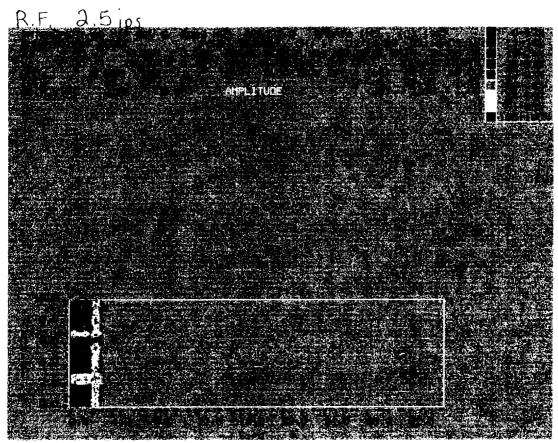


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y- Axis Scan Velocity color PHOTOGRAPH

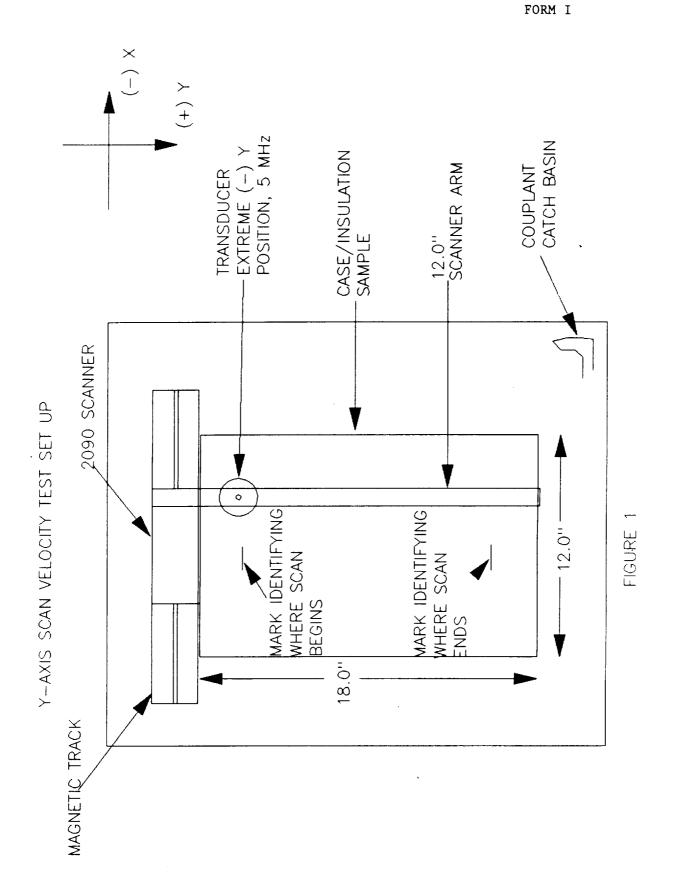




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Y-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

DATE: al Feb 89	SYSTEM SERIAL NUMBER:
OPERATOR: Brad Lushing	TRANSDUCER SERIAL NUMBER: 78353
VERIFTED /BY:	STOP WATCH MANUFACTURER:
SOFTWARE VERSION NUMBER:	
PART 1. Y-AXIS SCANNING VELOCITY VER	IFICATION TEST (PEAK DETECT)
1) COMPLETE FOLLOWING CHECK LIST BEF	ORE PERFORMING TEST.
a) 5.0 MHz TRANSDUCER IS BEING US	COMPLETED (INITIALS) ED
b) 12.0 IN. LONG SCANNER ARM IS B	
c) SAMPLING INCREMENT IS 0.10 IN.	<u>BSC</u>
d) Y-AXIS SCAN VELOCITY IS PROGRAM	MED TO BSC.
e) A/D SAMPLING RATE IS AT 20.0 M	Hz <u>BSC</u>
f) SYSTEM IS PEAK DETECTING OFF TO MULTIPLE BACK-WALL REFLECTION	
g) FIGURE 1 OF THIS FORM HAS BEEN SO PROPER TEST SET-UP IS ACHIE	
h) PRINTER IS CONFIGURED PROPERLY	<u>β</u> \$ζ
2) PERFORM TEST THREE TIMES AND RECO	RD RESULTS IN SPACE BELOW.
TIME VELO	CITY (12.0 IN./TIME)
RUN 1 3.2 3	.12 17/500
RUN 2 3.2 3	.12 1/3cc
RUN 3 3.1 3.	.15 "/sec

(PART 1 CONT.)

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY (12.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
V P A D	VELOCITIE PRESENTATA ATTACH IT	ES IS WITHIN ± 0.5 FION IS ACCEPTABLE F TO THIS FORM, NO	THE INDICATED AND ACTUAL SCAN IN./SEC., AND THE SCREEN DATA , MAKE A HARD COPY OF THE SCREEN, TE IN THE SPACE BELOW WHAT WAS M, AND PROCEED TO PART 2 OF THIS
C	CORRECTIV	VE ACTION(S)	
_			
_			

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	I

PAR	T 2. Y-AXI	s scanning velo	CITY (PEAK DETECT @ 2.5	IN./SEC.)
1)	COMPLETE F	OLLOWING CHECK I	LIST BEFORE PERFORMING T	EST.
				COMPLETED (INITIALS)
	a) Y-AXIS 2.5 IN.	SCAN VELOCITY IS	5 PROGRAMMED TO	BSC
	b) REMAINI FORM HA	NG PARAMETERS FI VE NOT BEEN CHAI	ROM PART 1 OF THIS	<u>BSC</u>
2)	PERFORM TE	ST THREE TIMES A	AND RECORD RESULTS IN SP.	ACE BELOW.
		TIME	VELOCITY (12.0 IN./	TIME)
	RUN 1	4.5	2.2 m/sec	
	RUN 2 _	Ч , Ч	2.2 in/sec	
	RUN 3	4.5	2.2 10/500	
3)	VELOCITIES PRESENTATI PRESENTATI OF THIS FO	ARE WITHIN ± 0 ON IS ACCEPTABLE ON, ATTACH IT TO RM.	THE INDICATED AND ACTUA.5 IN./SEC., AND THE SCRE, MAKE A HARD COPY OF TO THIS FORM, AND PROCEED	EEN DATA HE SCREEN TO PART 3
	IF THE DIF ALL CONNEC TEST.	FERENCE IS GREAT TIONS AND VALUES	TER THAN ± 0.5 IN./SEC., SENTERED INTO SET FORM.	RE-CHECK RE-PERFORM
4)	RECORD INF	ORMATION FROM T	HREE RUNS IN SPACE BELOW	
		TIME	VELOCITY (12.0 IN./TIM	Ε)
	RUN 1	4.5		
	RUN 2			
	RUN 3			

COMPLETED

Page 59

5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. Y-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE Y-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a)	5.0 MHz TRANSDUCER IS BEING USED	(INITIALS)
b)	12.0 IN. LONG SCANNER ARM IS BEING USED	BSC
c)	SAMPLING INCREMENT IS 0.10 IN	BSC
d)	Y-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	BSC
e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
f)	SYSTEM IS IN RF MODE	BSC
g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS	BSC
h)	1.5 C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC_
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	BSC
j)	PRINTER IS CONFIGURED PROPERLY	BSC
		CTP-0100

3)	PERFORM TEST THREE TIMES	AND RECORD RESULTS IN SPACE BELOW.
	TIME	VELOCITY (12.0 IN./TIME)
	RUN 1 3.2	3.
	RUN 2 3.2	3.
	RUN 3 _ 3.3	3.0
4)	VELOCITIES IS WITHIN ± 0. PRESENTATION IS ACCEPTABLE	THE INDICATED AND ACTUAL SCAN IN./SEC., AND THE SCREEN DATA IE, (A) MAKE A HARD COPY OF THE SCREEN IM, AND (B) PROCEED TO PART 4 OF THIS
	IF THE DIFFERENCE IS GREAT CONNECTIONS AND VALUES EN	TER THAN ± 0.5 IN., RE-CHECK ALL TERED INTO SET FORM. RE-CHECK TEST.
5)	RECORD INFORMATION FROM T	THE THREE RUNS IN SPACE BELOW.
	TIME	VELOCITY (12.0 IN./TIME)
	RUN 1	
	RUN 2	
	RUN 3	
6)	VELOCITIES IS WITHIN ± 0. PRESENTATION IS ACCEPTABLE SCREEN (B) ATTACH IT TO	N THE INDICATED AND ACTUAL SCAN 5 IN./SEC., AND THE SCREEN DATA LE, (A) MAKE A HARD COPY OF THE THIS FORM, (C) NOTE IN THE SPACE DRRECT THE PROBLEM, AND (D) PROCEED
	CORRECTIVE ACTION(S)	
	PRESENTATION OF THE SCREE	ILL UN-RESOLVABLE, MAKE A HARD COPY EN DISPLAY, ATTACH IT TO THIS FORM, RE REPORT, FORM N, AND NOTIFY MTI
	***NOTE: BE PREPARED TO	GIVE THE SPECIFICS OF THE PROBLEM.
		CTP-0100 Page 60

PAGE 6 FORM I

ART 4.	Y-AXI	S SCANNING V	ELOCITY (RF MODE @ 2.5	IN./SEC.)
COMP	LETE F	OLLOWING CHE	CKLIST BEFORE PERFORMIN	NG TEST.
(a)			CITY IS PROGRAMMED TO	~ ~ ~ ~
(b)			TERS FROM PART 3 OF THE	
PERF	ORM TE	ST THREE TIM	ES AND RECORD RESULTS 1	IN SPACE BELOW.
		TIME	IC.C. VELOCITY (12.0 IN.,	TIME)
RUN	1	4.6	2.1	
RUN	2 _	4.6	2.1	<u> </u>
RUN	3 _	4.6	2.1	·
VELOC IS AC (B) A WAS D AXIS	CITIES CCEPTAR ATTACH OONE TO SCAN V	IS WITHIN ± BLE, (A) MAKE IT TO THIS E CORRECT THE	EEN THE INDICATED AND A 0.5 IN./SEC., AND THE E A HARD COPY OF THE SC FORM, (C) NOTE IN THE SE PROBLEM, AND (D) PROCIFICATION TESTS.	SCREEN PRESENTATION CREEN PRESENTATION SPACE BELOW WHAT
			REATER THAN ± 0.5 IN./S	

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TEST.

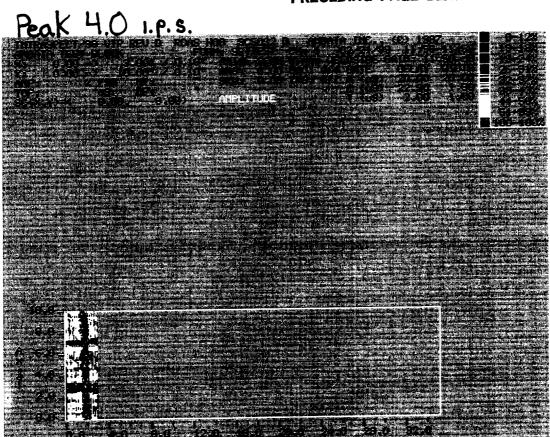
RECO	RD '	THE	INFORMATIO	N FRO	M THE 3	CHREE I	RUNS	IN SP	ACE I	BELOW.	
			TIME		VELOC	TY (1	2.0 I	N./TI	ME)		
RUN	1	-		_							
RUN	2	-									
RUN	3	-						· · · · · ·			
IS A (B) WAS AXIS	CCE: ATT. DON: SC:	PTA ACH E T AN	IS WITHIN BLE, (A) MA IT TO THIS O CORRECT TO VELOCITY VE ACTION(S)	KE A FORM THE PR	HARD CO , (C) I OBLEM, ATION 1	OPY OF NOTE II AND (I	THE N THE D) PR	SCREE SPAC OCEED	IN PI E BE: D TO '	RESENT LOW WH THE X-	CATION HAT
											
IF T PROB	HE LEM	DIF /FA	FERENCE WAS	S STIL	L UN-R	ESOLVA: AND (B	BLE,) NOT	(A) C	OMPL ITI E	ETE A LECTRO	ONIC
MAIN	TEN	ANC	Ε.								

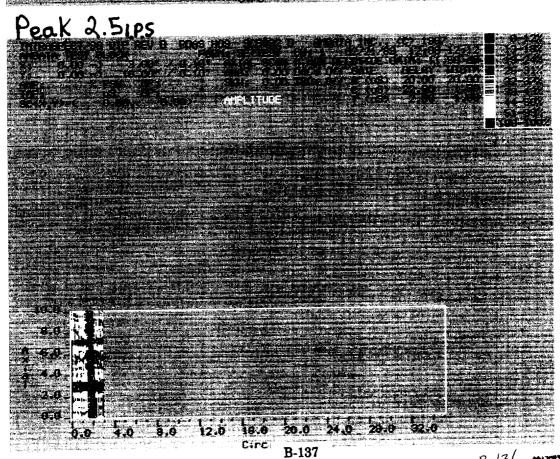
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

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4 - Axis Scan Velocity ORIGINAL PAGE COLOR PHOTOGRAPH

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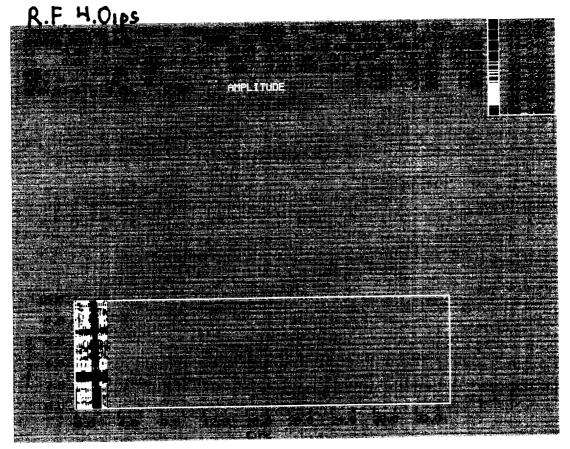


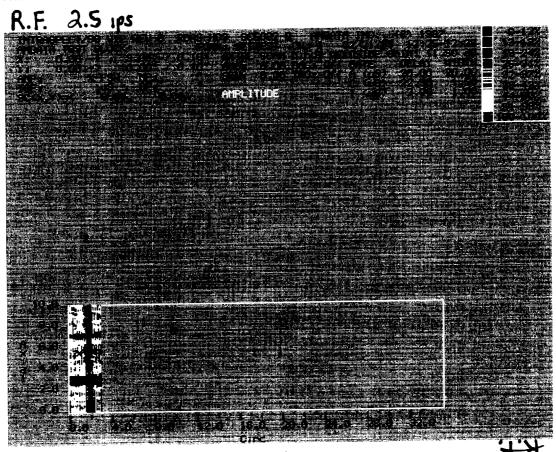


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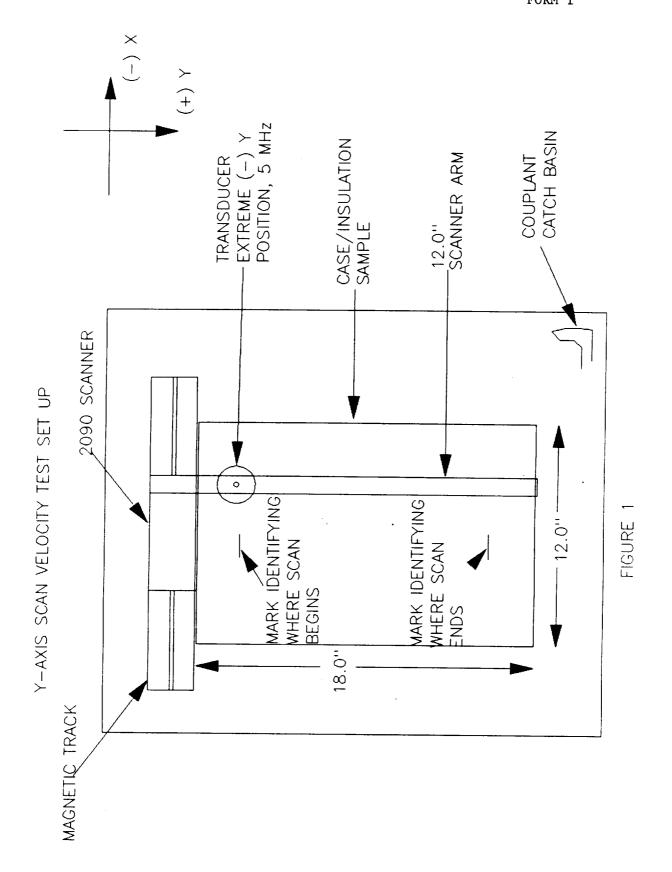
y-Axis Scan Velocity

ORIGINAL PAGE COLOR PHOTOGRAPH





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Y-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

DATE: 9 March 89	SYSTEM SERIAL NUMBER: SA 51865 TRANSDUCER SERIAL NUMBER:
OPERATOR: Brad Cushing	RD-3
VERIFIED BY:	STOP WATCH MANUFACTURER:
SOFTWARE VERSION NUMBER:	
PART 1. Y-AXIS SCANNING VELOCITY VER	IFICATION TEST (PEAK DETECT
1) COMPLETE FOLLOWING CHECK LIST BEF	ORE PERFORMING TEST.
a) 5.0 MHz TRANSDUCER IS BEING US	COMPLETED (INITIALS)
VC C	201
b) 12.0 IN. LONG SCANNER ARM IS B	EING USED DOC
c) SAMPLING INCREMENT IS 0.10 IN.	35C_
d) Y-AXIS SCAN VELOCITY IS PROGRA 4.0 IN./SEC	MED TO BSC.
e) A/D SAMPLING RATE IS AT 20.0 M	Hz <u>BSC</u>
f) SYSTEM IS PEAK DETECTING OFF T MULTIPLE BACK-WALL REFLECTION	
g) FIGURE 1 OF THIS FORM HAS BEEN SO PROPER TEST SET-UP IS ACHIE	
h) PRINTER IS CONFIGURED PROPERLY	BSC.
2) PERFORM TEST THREE TIMES AND RECO	PRD RESULTS IN SPACE BELOW.
TIME VELO	CITY (12.0 IN./TIME)
RUN 1 3.3 3.	O m/sec
RUN 2 3.1 3	2 in/sic
RUN 3 3.3 3	0 m/stc

(D . D	•	~~~	
(PART	- 1	CONT.)

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

	TIME	VELOCITY (12.0 IN./TIME)
RUN 1		
RUN 2		
RUN 3		
VELOCITIES PRESENTATI ATTACH IT	S IS WITHIN ± 0. ION IS ACCEPTABL TO THIS FORM, N	THE INDICATED AND ACTUAL SCAN 5 IN./SEC., AND THE SCREEN DATA E, MAKE A HARD COPY OF THE SCREEN OTE IN THE SPACE BELOW WHAT WAS EM, AND PROCEED TO PART 2 OF THIS

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	Ι

PAF	RT 2. Y-AX	S SCANNING VE	LOCITY (PEAK DETECT @ 2.5	IN./SEC.)
1)	COMPLETE E	FOLLOWING CHEC	K LIST BEFORE PERFORMING T	EST.
				COMPLETED (INITIALS)
		SCAN VELOCITY	IS PROGRAMMED TO	BSC
		ING PARAMETERS AVE NOT BEEN C	FROM PART 1 OF THIS HANGED	BSC
2)	PERFORM TI	EST THREE TIME	S AND RECORD RESULTS IN SP	ACE BELOW.
		TIME	VELOCITY (12.0 IN./	TIME)
	RUN 1	Ч. 5	2.2 11/500	
	RUN 2	4.5	2.2 in/sec	
	RUN Z	A		
	RUN 3	4.6	2. 1 10/540	
3)	VELOCITIE	S ARE WITHIN ± ION IS ACCEPTA ION, ATTACH II	EEN THE INDICATED AND ACTUA E 0.5 IN./SEC., AND THE SCR ABLE, MAKE A HARD COPY OF T T TO THIS FORM, AND PROCEED	EEN DATA HE SCREEN
	IF THE DI ALL CONNE TEST.	FFERENCE IS GF CTIONS AND VAL	REATER THAN ± 0.5 IN./SEC., LUES ENTERED INTO SET FORM.	RE-CHECK RE-PERFORM
4)	RECORD IN	FORMATION FROM	1 THREE RUNS IN SPACE BELOW	1.
		TIME	VELOCITY (12.0 IN./TIM	IE)
	RUN 1			-
	RUN 2			-
	RUN 3			-

5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N , AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. Y-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE Y-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a)	5.0 MHz TRANSDUCER IS BEING USED	(INITIALS)
b)		BSC
c)	SAMPLING INCREMENT IS 0.10 IN	BSC
d)	Y-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	BSC
e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
f)	SYSTEM IS IN RF MODE	BSC
g)	V =	BSC
h)	C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	BSC
j)	PRINTER IS CONFIGURED PROPERLY	BSC

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COMPLETED

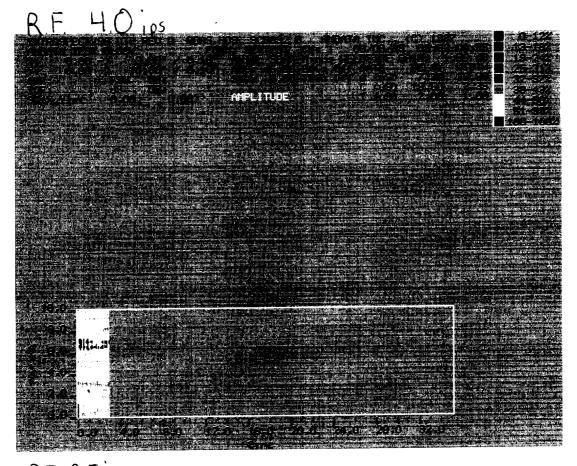
PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW.
TIME VELOCITY (-12.0 IN./TIME)
RUN 1 3.1 3.2
RUN 2 3.1 3.2
7 7
RON 5
IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, AND (B) PROCEED TO PART 4 OF THIS FORM.
IF THE DIFFERENCE IS GREATER THAN ± 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-CHECK TEST.
RECORD INFORMATION FROM THE THREE RUNS IN SPACE BELOW.
TIME VELOCITY (12.0 IN./TIME)
RUN 1
RUN 2
RUN 3
IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED TO PART 4 OF THIS FORM.
CORRECTIVE ACTION(S)
IF THE DIFFERENCE WAS STILL UN-RESOLVABLE, MAKE A HARD COPY
PRESENTATION OF THE SCREEN DISPLAY, ATTACH IT TO THIS FORM, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.
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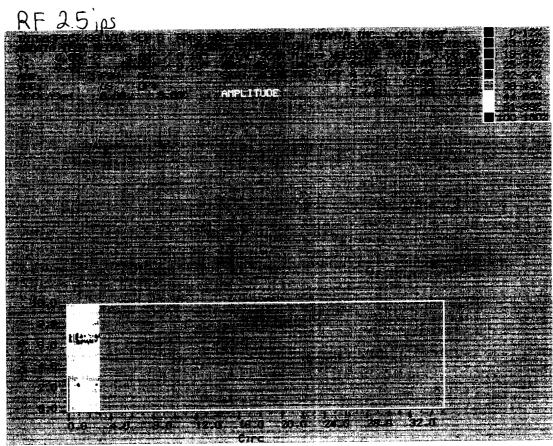
PAF	RT 4.	Y-AX	IS SCA	NNING	VELOC	ITY (R	F MODE	⊡ @ 2	.5 IN	./SE	EC.)	
1)	COMPI	LETE	FOLLOW	ING CH	ECKLI	ST BEF	ORE PE	ERFOR	MING	TESI	Γ.	
	(a)		XIS SCA								COMPL (INIT	IALS)
	(b)	REM FOR	AINING M HAVE	PARAM NOT B	ETERS EEN CI	FROM HANGED	PART 3	OF	THIS	• •	3 S	C
2)	PERFO	RM T	EST THE	REE TII	MES AI	ND REC			S IN :	SPAC	E BEL	OW.
			TIME	;	7	/ELOCI	10. TY (12	. <i>O</i> 0 II	N./TII	ME)		
	RUN	1	4.4	1	-	2.3	ξ					
	RUN	2	4,4		_	2.2						
	RUN	3	<u> </u>	 .	_	2.2						
3)	VELOC IS AC (B) A WAS DO AXIS	ITIES CEPTA TTACH ONE T	FFERENC S IS WI ABLE, (H IT TO FO CORR VELOCI	THIN EA) MAKE THIS ECT THE	: 0.5 E A H FORM, E PRO	IN./SE IARD CO (C) N BLEM.	EC., AI OPY OF OTE II AND (1	ND THE	HE SCH SCREE	REEN EN :	PRESEN	ENTATION VTATION, VHAT (-
												
												
	IF THE ALL CO TEST.	E DIF	FERENCE TIONS	E IS G AND VA	REATE LUES	R THAN ENTERE	± 0.5 D INTO	5 IN. 5 SET	/SEC. FORM	, RE	E-CHEC E-PERF	K ORM

RECORD THE INFO	MATION FRO	OM THE THRE	EE RUNS	IN SPACE	BELOW.
TIME	3	VELOCITY	(12.0 II	N./TIME)	
RUN 1					
RUN 2					
RUN 3					
IF THE DIFFERENCE VELOCITIES IS WILL IS ACCEPTABLE, (B) ATTACH IT TO WAS DONE TO CORRECTIVE ACTION CORRECTIVE ACTION	THIN ± 0. (A) MAKE A THIS FOR RECT THE P TY VERIFI	5 IN./SEC. HARD COPY M, (C) NOTE ROBLEM, ANE CATION TES	, AND THOOF THE E IN THE D (D) PROTES.	E SCREEN SCREEN I SPACE BI OCEED TO	PRESENTATION, PRESENTATION, ELOW WHAT THE X-
					
IF THE DIFFERENCE PROBLEM/FAILURE MAINTENANCE.	CE WAS STI REPORT, F	LL UN-RESO	LVABLE, (B) NOT	(A) COMP	LETE A ELECTRONIC

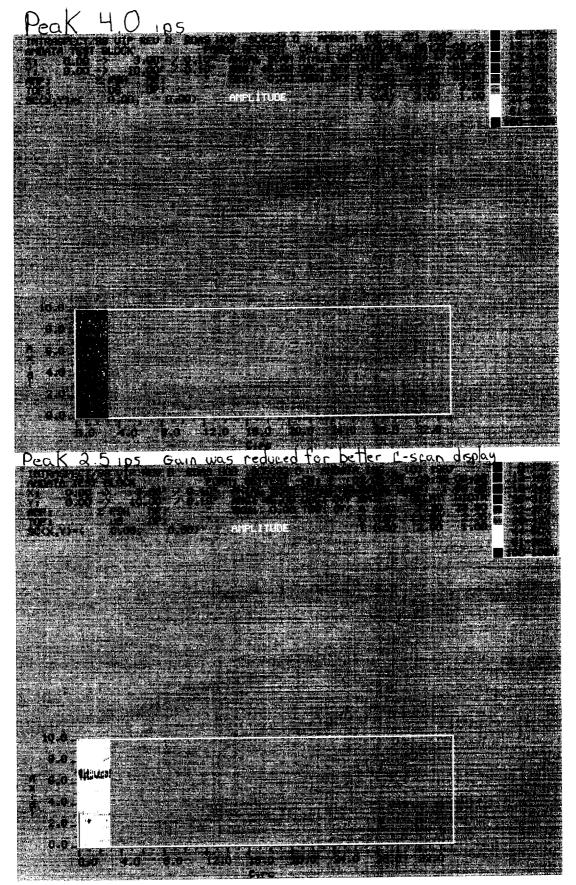
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

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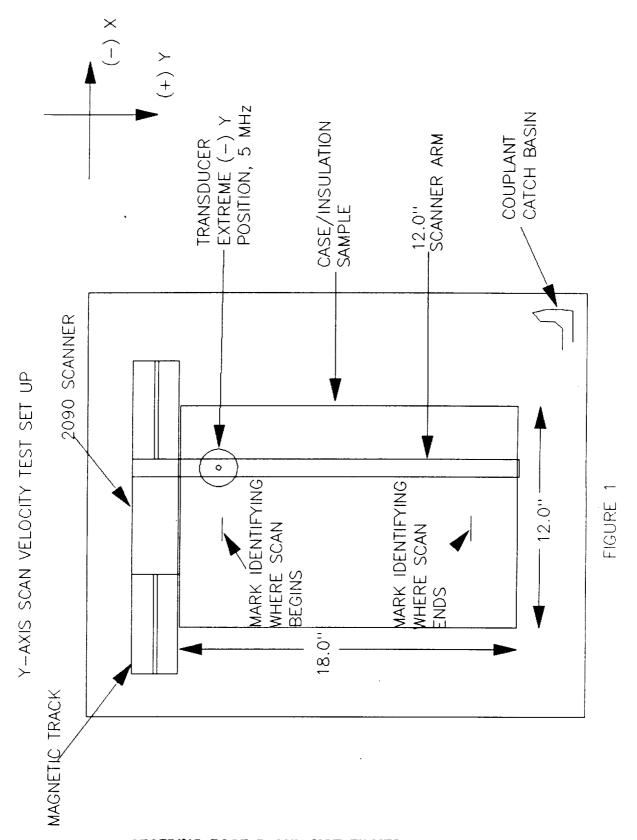




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Y-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

OATE	:	23 May 89		system seriai	NUMBER:
OPER	ATC	DR: B. Cashing		TRANSDUCER SE	ERIAL NUMBER:
VERI	FIE	D BY:		STOP WATCH MA	ANUFACTURER:
SOFT	WAR	RE VERSION NUMBER:			
PART	1.	Y-AXIS SCANNING VELOC	ITY VERI	FICATION TEST	r (PEAK DETECT
1)	COM	IPLETE FOLLOWING CHECK L	IST BEFO	RE PERFORMING	G TEST.
					COMPLETED (IŅIŢĮALS)
а	ı)	5.0 MHz TRANSDUCER IS B	EING USE	D	·· <u>B C</u>
b)	16 (12.0 IN. LONG SCANNER A	RM IS BE	ING USED	<u>BSC</u>
c	:)	SAMPLING INCREMENT IS O	.10 IN.		\cdots BSC
đ	l)	Y-AXIS SCAN VELOCITY IS 4.0 IN./SEC	PROGRAM	ED TO	<u>Bsc</u>
e	e)	A/D SAMPLING RATE IS AT	20.0 MH	(z	<u> </u>
f	Ξ)	SYSTEM IS PEAK DETECTIN MULTIPLE BACK-WALL REFL	G OFF TH	E EIGHTH	<u>Boc</u>
ç	3)	FIGURE 1 OF THIS FORM H SO PROPER TEST SET-UP I	AS BEEN	REVIEWED AS	<u>BiC</u>
ŀ	1)	PRINTER IS CONFIGURED P	ROPERLY		$\frac{2}{2}$
2)	PE	RFORM TEST THREE TIMES A	AND RECOR	RD RESULTS IN	SPACE BELOW.
		TIME	VELO	CITY (12.0 IN	./TIME)
	R	un 1 <u> </u>	_2.9	4 1ps	
	RI	un 2 <u>267</u>	2.9	۲ نوع	
	RI	un 3 22265	3,0	ι ίρς	

(PART	1	CONT.)
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3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY (12.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
i i	VELOCITIE PRESENTAI ATTACH II	S IS WITHIN ± 0.5 TION IS ACCEPTABLE TO THIS FORM, NO	THE INDICATED AND ACTUAL SCAN IN./SEC., AND THE SCREEN DATA MAKE A HARD COPY OF THE SCREEN, TE IN THE SPACE BELOW WHAT WAS M, AND PROCEED TO PART 2 OF THIS
(CORRECTIV	E ACTION(S)	
-			
_			

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	Ι

PAR	T 2. Y-AX	IS SCANNING VEI	OCITY (PEAK DETECT @ 2.5 IN./SEC.)
1)	COMPLETE I	FOLLOWING CHECK	LIST BEFORE PERFORMING TEST.
-,			COMPLETED (INITIALS)
	a) Y-AXIS 2.5 IN	SCAN VELOCITY	IS PROGRAMMED TO BSC
	b) REMAIN FORM H	ING PARAMETERS AVE NOT BEEN C	FROM PART 1 OF THIS HANGED
2)	PERFORM T	EST THREE TIMES	s and record results in space below.
		TIME	VELOCITY (42.0 IN./TIME)
	RUN 1	3.65	2.2 105
		3 66	_ •
			2.2 105
	RUN 3	3.61	
3)	VELOCITIE PRESENTAT PRESENTAT OF THIS F	S ARE WITHIN ± TION IS ACCEPTA TION, ATTACH IT TORM.	EN THE INDICATED AND ACTUAL SCAN 0.5 IN./SEC., AND THE SCREEN DATA BLE, MAKE A HARD COPY OF THE SCREEN TO THIS FORM, AND PROCEED TO PART 3
	IF THE DI ALL CONNE TEST.	FFERENCE IS GR CCTIONS AND VAL	EATER THAN ± 0.5 IN./SEC., RE-CHECK UES ENTERED INTO SET FORM. RE-PERFORM
4)	RECORD IN	FORMATION FROM	THREE RUNS IN SPACE BELOW.
ĺ		TIME	VELOCITY (12.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
	1014 0		

COMPLETED

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5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N , AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. Y-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE Y-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

		(INITIALS)
a)	5.0 MHz TRANSDUCER IS BEING USED	3SE
b)	1 ^C () 12.0 IN. LONG SCANNER ARM IS BEING USED	BSC
c)	SAMPLING INCREMENT IS 0.10 IN	BSC
d)	Y-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC.	BSC
e)	A/D SAMPLING RATE IS AT 20.0 MHz	Bic
f)		<u> BSC</u>
g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS	BSC
h)	C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	BSC
j)	PRINTER IS CONFIGURED PROPERLY	BSL
		CTP-0100

3)	PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW.
	TIME VELOCITY (12.0 IN./TIME)
	RUN 1 2.52 3.1 ips unable to complete soun
	RUN 2 2.64 30 ips " " "
	RUN 3 $\frac{2.61}{2.0 \text{ ips}}$ $\frac{3.0 \text{ ips}}{10.0 \text{ ips}}$ $\frac{11}{11}$
4)	IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, AND (B) PROCEED TO PART 4 OF THIS FORM.
	IF THE DIFFERENCE IS GREATER THAN ± 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-CHECK TEST.
5)	RECORD INFORMATION FROM THE THREE RUNS IN SPACE BELOW.
	TIME VELOCITY (12.0 IN./TIME)
	RUN 1
	RUN 2
	RUN 3
6)	IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED TO PART 4 OF THIS FORM.
	CORRECTIVE ACTION(S)
	IF THE DIFFERENCE WAS STILL UN-RESOLVABLE, MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, ATTACH IT TO THIS FORM, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.
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RT 4.	Y-AX	IS SCAN	INING VE	LOCITY (RF MOI	DE @ 2	.5 IN./	SEC.)	
COMP	LETE	FOLLOWI	NG CHEC	KLIST BE	FORE I	PERFOR	MING TE	ST.	
(a)				ITY IS F				COMPLETED (INITIALS)	
(b)				ERS FROM N CHANGE				BSC	
PERF	ORM T	EST THR	EE TIME	S AND RE		RESULT 8.0	S IN SP	ACE BELOW.	
		TIME	;	VELOC			N./TIME)	
RUN	1	4 30	Ì	<u> </u>	<u> </u>	5		_	
RUN	2	4.4	3	2.					
RUN	3	4.45	<u>) </u>	<u>a.</u> ;	2 1p	5			
VELOGIS AC (B) A WAS I AXIS	CITIE: CCEPT. ATTACI DONE ' SCAN	S IS WI ABLE, (H IT TO TO CORR	THIN ± (A) MAKE THIS F(ECT THE TY VERI	A HARD ORM, (C)	SEC., COPY C NOTE , AND	AND TO F THE IN THO (D) Po	HE SCREI SCREEN E SPACE	L SCAN EN PRESENTATION PRESENTATION BELOW WHAT TO THE X-	ON,
IF TH ALL O TEST.	CONNE	FFERENC CTIONS	E IS GRI AND VALU	EATER TH JES ENTE	AN ± 0 RED IN).5 IN NTO SET	./SEC., I FORM.	RE-CHECK RE-PERFORM	

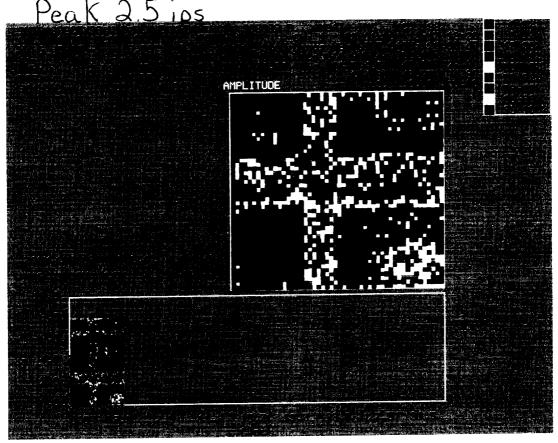
4)	RECORD THE	E INFORMATION FRO	OM THE THREE RUNS IN SPACE	BELOW.
		TIME	VELOCITY (12.0 IN./TIME)	
	RUN 1			
	RUN 2			
	RUN 3			
5)	VELOCITIES IS ACCEPTA (B) ATTACE WAS DONE TAXIS SCAN	S IS WITHIN ± O. ABLE, (A) MAKE A H IT TO THIS FOR TO CORRECT THE P VELOCITY VERIFI	THE INDICATED AND ACTUAL: 5 IN./SEC., AND THE SCREEN HARD COPY OF THE SCREEN M, (C) NOTE IN THE SPACE BI ROBLEM, AND (D) PROCEED TO CATION TESTS.	PRESENTATION, PRESENTATION, ELOW WHAT THE X-
	IF THE DIT PROBLEM/FA	AILURE REPORT, F	LL UN-RESOLVABLE, (A) COMP ORM N, AND (B) NOTIFY MTI	LETE A ELECTRONIC

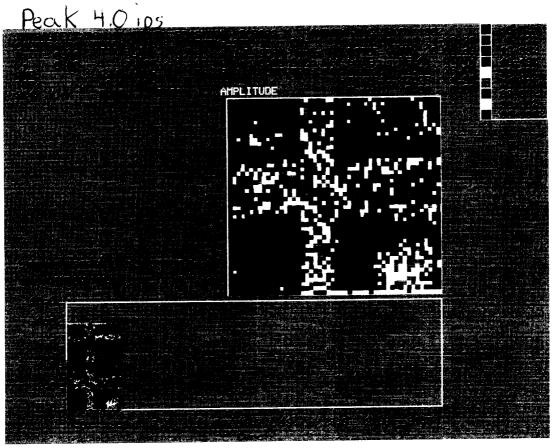
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

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4-Axis Scan Velocity

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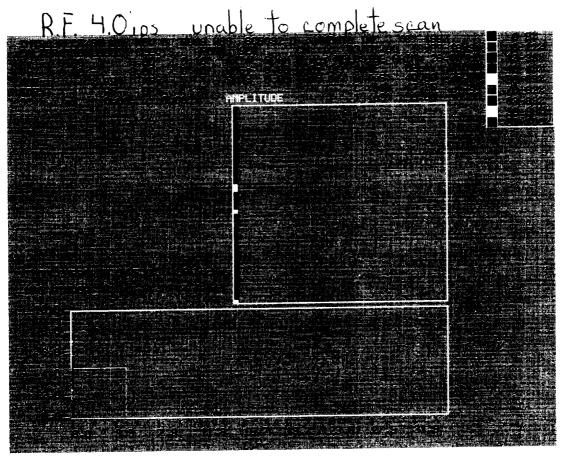


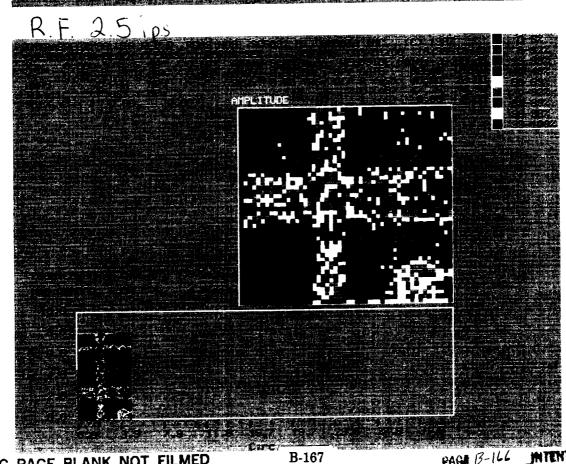


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y-Axis Scan Velocities

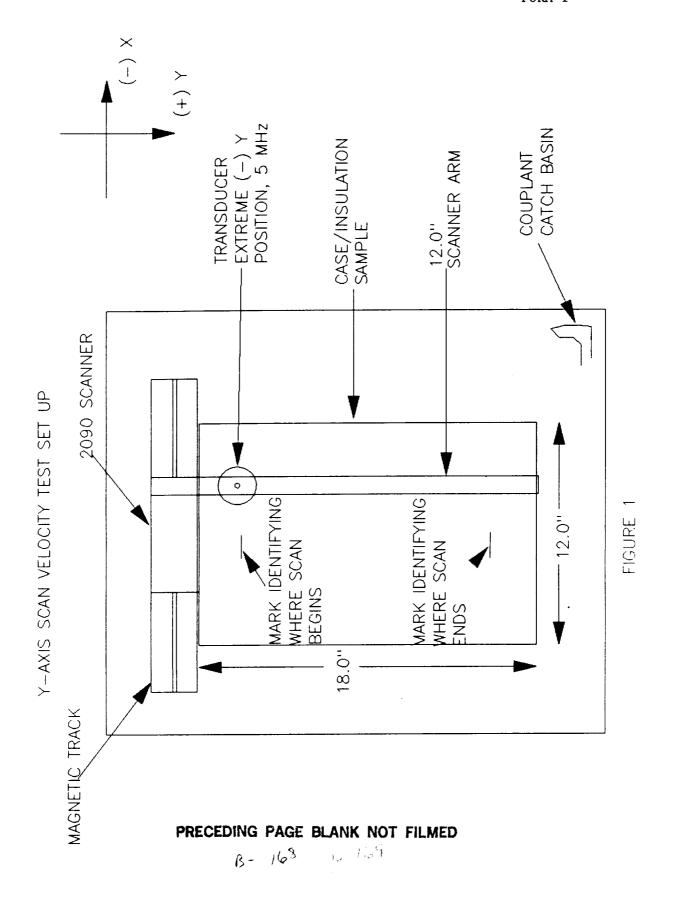
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X-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

DAT	Έ: ₍	6 Feb 89	SA-S1866	NUMBER:
OPE	RAT	QR: (/)	TRANSDUCER SEE	RIAL NUMBER:
VER		Brad Lushing	STOP WATCH MAN	
	, J_	1. Kamer.	[itizen	
SOF	TWAL	RE VERSION NUMBER:		
PAR	T 1	. X-AXIS SCANNING VELOCITY VER	IFICATION TEST	(PEAK DETECT)
1)	CO	MPLETE FOLLOWING CHECK LIST BEF	ORE PERFORMING	TEST.
				COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING US	ED	
	b)	10.0 IN. LONG SCANNER ARM IS B	EING USED	. <u>BSC</u>
	c)	SAMPLING INCREMENT IS 0.10 IN.		. <u>B&C</u>
	d)	X-AXIS SCAN VELOCITY IS PROGRAM	MED TO	. <u>BSC</u>
	e)	A/D SAMPLING RATE IS AT 20.0 M	Hz	· 3xc
	f)	SYSTEM IS PEAK DETECTING OFF T MULTIPLE BACK-WALL REFLECTION	HE EIGHTH	. <u>B1</u> C
	g)	FIGURE 1 OF THIS FORM HAS BEEN SO PROPER TEST SET-UP IS ACHIE	REVIEWED AS VED	. <u>BC</u>
	h)	PRINTER IS CONFIGURED PROPERLY		· RIC
2)	PE	RFORM TEST THREE TIMES AND RECO	RD RESULTS IN	SPACE BELOW.
		TIME VELO	CITY (16.0 IN.	/TIME)
	R	$\frac{5.88}{5}$	1.72 "/sec	
			.70 ^m /sec	
		· · · · · · · · · · · · · · · · · · ·	70 11/sec	
	1			

(PART 1 CONT.)

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm Q.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY	(16.0 IN./TIME)
	RUN 1			
	RUN 2			
	RUN 3		• • • • • • • • • • • • • • • • • • • •	
5)	VELOCITIE PRESENTAT ATTACH IT	S IS WITHIN ± 0. NON IS ACCEPTABL TO THIS FORM, N	5 IN./SEC., A E, MAKE A HAR OTE IN THE SE	ED AND ACTUAL SCAN AND THE SCREEN DATA RD COPY OF THE SCREEN, PACE BELOW WHAT WAS EED TO PART 2 OF THIS
	CORRECTIV	E ACTION(S)		

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAI	RT 2. X-AXI	S SCANNING	ELOCITY (PEAK	DETECT @ 2.5	IN./SEC.)
1)	COMPLETE F	OLLOWING CH	ECK LIST BEFORE	PERFORMING	TEST.
					COMPLETED (INITIALS)
	a) X-AXIS 2.5 IN.	SCAN VELOCI	TY IS PROGRAMME	D TO	BOL
	b) REMAINI FORM HA	NG PARAMETE VE NOT BEEN	RS FROM PART 1 CHANGED	OF THIS	BSC
2)	PERFORM TE	ST THREE TI	MES AND RECORD	RESULTS IN S	SPACE BELOW.
		TIME		TY (16.0 IN.	
	RUN 1	75432		2 <u>%:</u>	
	RUN 2 _	7.66	2,03	3 11/1/2	
			2.13		
3)	VELOCITIES PRESENTATI PRESENTATI OF THIS FO IF THE DIF	ARE WITHIN ON IS ACCEP ON, ATTACH RM.	WEEN THE INDICA ± 0.5 IN./SEC. FABLE, MAKE A H IT TO THIS FORM GREATER THAN ± ALUES ENTERED I	, AND THE SO IARD COPY OF I, AND PROCEE O.5 IN./SEC.	REEN DATA THE SCREEN D TO PART 3 , RE-CHECK
4)	RECORD INF	ORMATION FR	OM THREE RUNS I	N SPACE BELC	₩.
		TIME	VELOCITY	(16.0 IN./TI	ME)
	RUN 1				
	RUN 2				_
	RUN 3				_
			OF GROWN AGE	\	CTP-0100 Page 67

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5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. X-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE X-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a)	5.0 MHz TRANSDUCER IS BEING USED	COMPLETED (INITIALS)
b)	10.0 IN. LONG SCANNER ARM IS BEING USED	<u> 350 </u>
c)	SAMPLING INCREMENT IS 0.10 IN	736
d)	X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC.	<u> </u>
e)	A/D SAMPLING RATE IS AT 20.0 MHz	33C
f)	SYSTEM IS IN RF MODE	BSC
g)		BSC
h)	che pulse width C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	3°C_
j)	PRINTER IS CONFIGURED PROPERLY	BSC
		CTP-0100

3)	PERFORM TEST THREE	TIMES AND RECORD RESULTS IN SPACE BELOW.
	TIME	VELOCITY (16.0 IN./TIME)
	RUN 1 _ 5.56 500	273 % vante to complete
	RUN 2 580 = 0	375 The work due to expected
	RUN 3 <u>5.75</u>	2 15 the wave exceeding resided waves
4)	VELOCITIES IS WITH PRESENTATION IS AC	BETWEEN THE INDICATED AND ACTUAL SCAN IN ± 0.5 IN./SEC., AND THE SCREEN DATA CEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN HIS FORM, AND (B) PROCEED TO PART 4 OF
	IF THE DIFFERENCE CONNECTIONS AND VA	IS GREATER THAN ± 0.5 IN., RE-CHECK ALL LUES ENTERED INTO SET FORM. RE-CHECK TEST.
5)	RECORD INFORMATION	FROM THE THREE RUNS IN SPACE BELOW.
	TIME	VELOCITY (16.0 IN./TIME)
	RUN 1	
	RUN 2	
	RUN 3	
6)	VELOCITIES IS WITH PRESENTATION IS AC SCREEN, (B) ATTACH BELOW WHAT WAS DON TO PART 4 OF THIS	
	in this CTO make I	and exceeded the system Limitations.
	IF THE DIFFERENCE PRESENTATION OF TH	was still un-resolvable, make a hard copy is screen display, attach it to this form, I/FAILURE REPORT, FORM N, AND NOTIFY MTI NANCE.
	***NOTE: BE PREPAR	ED TO GIVE THE SPECIFICS OF THE PROBLEM.
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PAGE 6 FORM J

ART	4.	X-AX	IS SCANN	ING VELO	CITY (RF MOD	DE @ 2.5 IN./	SEC.)
.) () COMPLETE FOLLOWING CHECKLIST BEFORE PERFORMING TEST.					ST.	
	(a)				Y IS PROGRAM	MED TO	COMPLETED (INITIALS)
	(b)				S FROM PART CHANGED	3 OF THIS	BSC
) F	PERF	ORM T	EST THRE	E TIMES	AND RECORD R	ESULTS IN SP	ACE BELOW.
			TIME		VELOCITY (1	6.0 IN./TIME)
	RUN	1	7.53 suc		2.12 "/200		_
	RUN	2	7.49 500		2 13 11/500		<u>.</u>
	RUN	3	7 15 00		2.14 19/sec		_
IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED TO THE UNINTERRUPTABLE POWER SUPPLY VERIFICATION TEST. CORRECTIVE ACTION(S)					EN PRESENTATION PRESENTATION, BELOW WHAT		
_							
_							
_		701 					···
Α	F TH LL C EST.	CONNEC	FFERENCE CTIONS AN	IS GREAT D VALUES	TER THAN ± 0 S ENTERED IN	.5 IN./SEC., TO SET FORM.	RE-CHECK RE-PERFORM

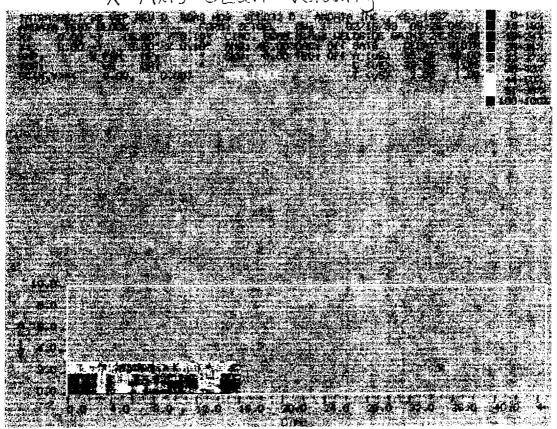
4)	RECORD THE	INFORMATION FR	OM THE THREE RUNS IN SPACE	BELOW.
		TIME	VELOCITY (16.0 IN./TIME)	
	RUN 1			
	RUN 2			
	RUN 3			
5)	VELOCITIES IS ACCEPTA (B) ATTACH WAS DONE TO UNINTERRUM	S IS WITHIN ± 0. ABLE, (A) MAKE A H IT TO THIS FOR TO CORRECT THE P PTABLE POWER SUP	THE INDICATED AND ACTUAL 5 IN./SEC., AND THE SCREEN A HARD COPY OF THE SCREEN PROBLEM, AND (D) PROCEED TO PPLY VERIFICATION TEST.	RESENTATION, ELOW WHAT THE
	IF THE DI PROBLEM/F MAINTENAN	AILURE REPORT, I	ILL UN-RESOLVABLE, (A) COMP FORM N, AND (B) NOTIFY MTI	LETE A ELECTRONIC

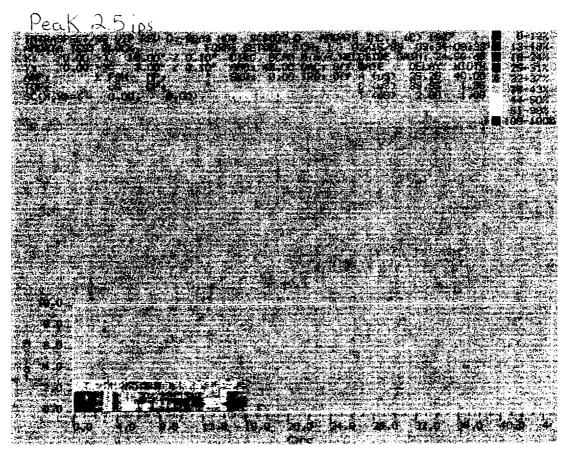
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

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X-Axis Scan Velocity

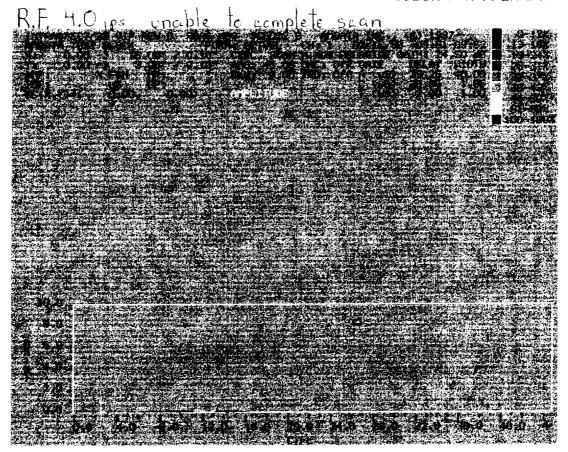


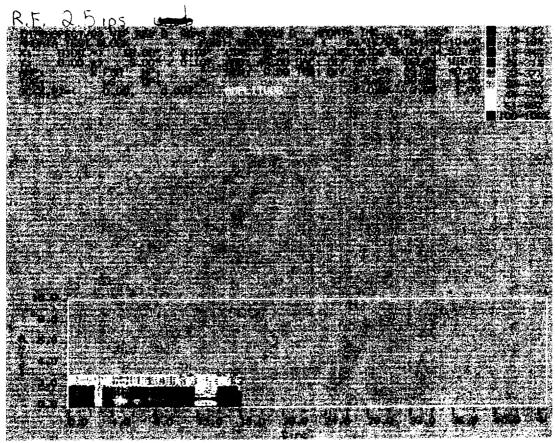


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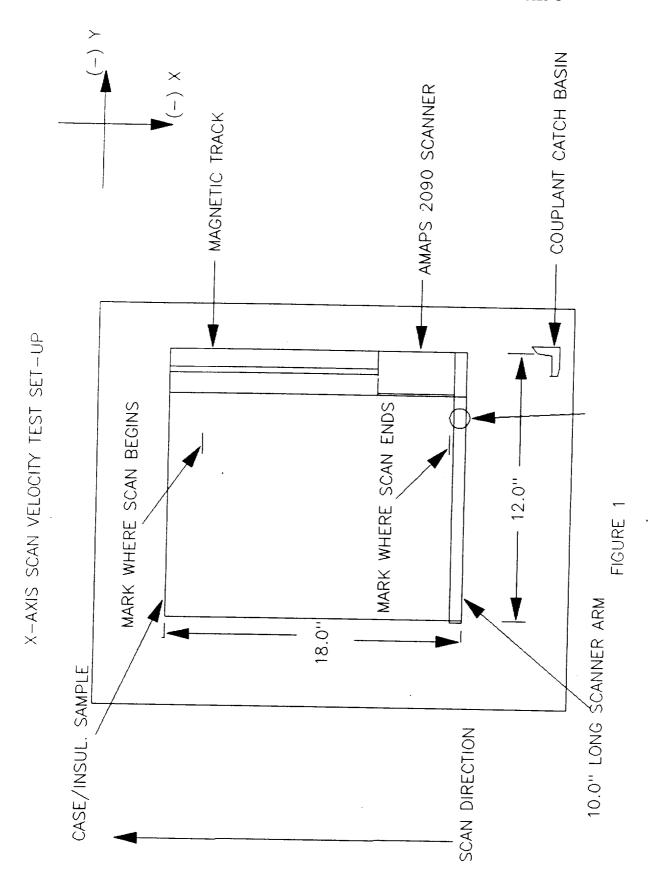
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B-182 6-183

X-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

	serial number: 51868
OPERATOR. TRANSDU	CER SERIAL NUMBER:
CTOD WA	TCH MANUFACTURER:
SOFTWARE VERSION NUMBER:	zen
<u> </u>	
PART 1. X-AXIS SCANNING VELOCITY VERIFICATIO	N TEST (PEAK DETECT)
1) COMPLETE FOLLOWING CHECK LIST BEFORE PERF	ORMING TEST.
	COMPLETED (INITIALS)
a) 5.0 MHz TRANSDUCER IS BEING USED	
b) 10.0 IN. LONG SCANNER ARM IS BEING USE	
c) SAMPLING INCREMENT IS 0.10 IN	<u>BSC</u>
d) X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	<u>B</u> SL
e) A/D SAMPLING RATE IS AT 20.0 MHz	<u>BSC</u>
f) SYSTEM IS PEAK DETECTING OFF THE EIGHT MULTIPLE BACK-WALL REFLECTION	BSC
g) FIGURE 1 OF THIS FORM HAS BEEN REVIEWE SO PROPER TEST SET-UP IS ACHIEVED	D AS
h) PRINTER IS CONFIGURED PROPERLY	<u>B5C</u>
2) PERFORM TEST THREE TIMES AND RECORD RESUL	TS IN SPACE BELOW.
TIME VELOCITY (16	5.0 IN./TIME)
RUN 1 5.9 2.7	
RUN 2 5.9 2.7	
RUN 3 6.0 2.6	

(PART	1	CONT.	1
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3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN ± 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY	(16.0 IN./TIME)
RU	JN 1			
RU	JN 2			
RU	л 3			
VEL PRE ATT	OCITII SENTA ACH II E TO (ES IS WITHIN ± 0.5 FION IS ACCEPTABLE F TO THIS FORM, NO	IN./SEC., A , MAKE A HAR TE IN THE SE	ED AND ACTUAL SCAN AND THE SCREEN DATA RD COPY OF THE SCREEN, PACE BELOW WHAT WAS EED TO PART 2 OF THIS
COR	RECTIV	/E ACTION(S)		
	·			

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	.1

				PORM 0
PAR	T 2. X-AXI	S SCANNING VELO	OCITY (PEAK DETECT @ 2.5	IN./SEC.)
1)	COMPLETE F	COLLOWING CHECK	LIST BEFORE PERFORMING	TEST.
				COMPLETED (INITIALS)
			S PROGRAMMED TO	BSC
	b) REMAINI FORM HA	NG PARAMETERS E VE NOT BEEN CHA	FROM PART 1 OF THIS	BSC
2)	PERFORM TE	ST THREE TIMES	AND RECORD RESULTS IN S	PACE BELOW.
		TIME	VELOCITY (16.0 IN.	/TIME)
	RUN 1 _	7.5	2.1	
		7.5	2.1	
	RUN 3		2.1	
3)	VELOCITIES PRESENTATI	ARE WITHIN ± COON IS ACCEPTABLE ON, ATTACH IT T	N THE INDICATED AND ACTU 0.5 IN./SEC., AND THE SC LE, MAKE A HARD COPY OF CO THIS FORM, AND PROCEE	REEN DATA THE SCREEN
	IF THE DIF ALL CONNEC TEST.	FERENCE IS GREATIONS AND VALUE	ATER THAN ± 0.5 IN./SEC. ES ENTERED INTO SET FORM	, RE-CHECK . RE-PERFORM
4)	RECORD INF	ORMATION FROM T	THREE RUNS IN SPACE BELO	w.
		TIME	VELOCITY (16.0 IN./TI	ME)
	RUN 1			
	RUN 2			
	RUN 3			_

COMPLETED

5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. X-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE X-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a)	5.0 MHz TRANSDUCER IS BEING USED	(INITIALS) BSC
b)	10.0 IN. LONG SCANNER ARM IS BEING USED	BSC
c)	SAMPLING INCREMENT IS 0.10 IN	BSC
d)	X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC.	<u>B</u> SC
e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
f)	SYSTEM IS IN RF MODE	BSC
g)	22.9 C-SCAN GATE DELAY IS 20.0 MICROSECONDS	<u> BSC</u>
h)	C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	DSC
j)	PRINTER IS CONFIGURED PROPERLY	BSC
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	PERFORM I	EST THREE TIME	S AND RECORD RESULTS IN SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1	6.0	2.6
	RUN 2	5.9	2.7
	RUN 3	5.9	2.7
)	VELOCITIE PRESENTATAND ATTAC THIS FORM	ES IS WITHIN ± TION IS ACCEPTA CH IT TO THIS F 1.	EN THE INDICATED AND ACTUAL SCAN 0.5 IN./SEC., AND THE SCREEN DATA BLE, (A) MAKE A HARD COPY OF THE SCREEN ORM, AND (B) PROCEED TO PART 4 OF
	IF THE D	IFFERENCE IS GR ONS AND VALUES	EATER THAN ± 0.5 IN., RE-CHECK ALL ENTERED INTO SET FORM. RE-CHECK TEST.
)	RECORD II	NFORMATION FROM	I THE THREE RUNS IN SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
)	VELOCITI PRESENTA SCREEN, BELOW WH	ES IS WITHIN ± TION IS ACCEPT!	EEN THE INDICATED AND ACTUAL SCAN O.5 IN./SEC., AND THE SCREEN DATA ABLE, (A) MAKE A HARD COPY OF THE TO THIS FORM, (C) NOTE IN THE SPACE CORRECT THE PROBLEM, AND (D) PROCEED
	DIGN HAD RESERVED OF THE D PRESENTA COMPLETE	excreded the souted in a manner	STILL UN-RESOLVABLE, MAKE A HARD COPY REEN DISPLAY, ATTACH IT TO THIS FORM, LURE REPORT, FORM N, AND NOTIFY MTI
			O GIVE THE SPECIFICS OF THE PROBLEM.
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PAI	RT 4.	X-AX	IS SCANNING	VELOCITY (RF MODE @ 2.5 IN./	SEC.)
1)	COMP	LETE	FOLLOWING C	CHECKLIST BEFORE PERFORMING TE	ST.
	(a)	X-A 2.5	***	LOCITY IS PROGRAMMED TO	COMPLETED (INITIALS)
	(b)	REMA FORI	AINING PARA M HAVE NOT	METERS FROM PART 3 OF THIS BEEN CHANGED	BSC
2)	PERFO	ORM TE	EST THREE T	IMES AND RECORD RESULTS IN SPA	ACE BELOW.
			TIME	VELOCITY (16.0 IN./TIME))
	RUN	1	7.5	2.1	_
	RUN	2	7.5	2.1	_
	RUN	3	7.6	2.1	_
3)	VELOCIS AC (B) A WAS DUNINT	TTTES CEPTA TTACH ONE T ERRUP	IS WITHIN BLE, (A) MA IT TO THIS O CORRECT T	TWEEN THE INDICATED AND ACTUAL ± 0.5 IN./SEC., AND THE SCREEN AKE A HARD COPY OF THE SCREEN 5 FORM, (C) NOTE IN THE SPACE THE PROBLEM, AND (D) PROCEED TO SUPPLY VERIFICATION TEST.	N PRESENTATION PRESENTATION,
	IF THE	E DIF	FERENCE IS TIONS AND V	GREATER THAN ± 0.5 IN./SEC.,	RE-CHECK RE-PERFORM

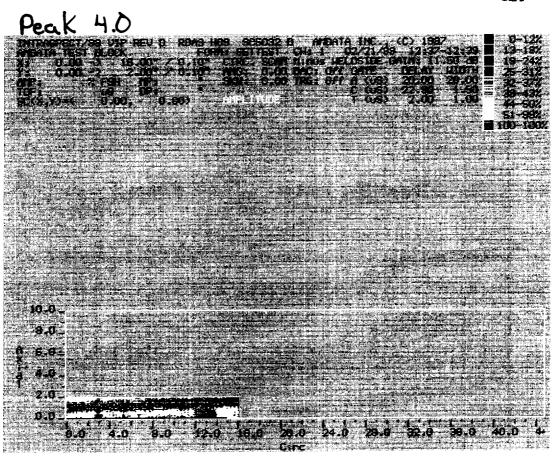
1)	RECORD THE	INFORMATION E	FROM THE THREE RUNS IN SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		
5)	VELOCITIES IS ACCEPTA (B) ATTACH WAS DONE I UNINTERRUF	S IS WITHIN ± 0 ABLE, (A) MAKE I IT TO THIS FO TO CORRECT THE TABLE POWER SU	EN THE INDICATED AND ACTUAL SCAN 0.5 IN./SEC., AND THE SCREEN PRESENTATION A HARD COPY OF THE SCREEN PRESENTATION, DRM, (C) NOTE IN THE SPACE BELOW WHAT PROBLEM, AND (D) PROCEED TO THE UPPLY VERIFICATION TEST.
	IF THE DIE PROBLEM/FA MAINTENANC	AILURE REPORT,	TILL UN-RESOLVABLE, (A) COMPLETE A FORM N, AND (B) NOTIFY MTI ELECTRONIC

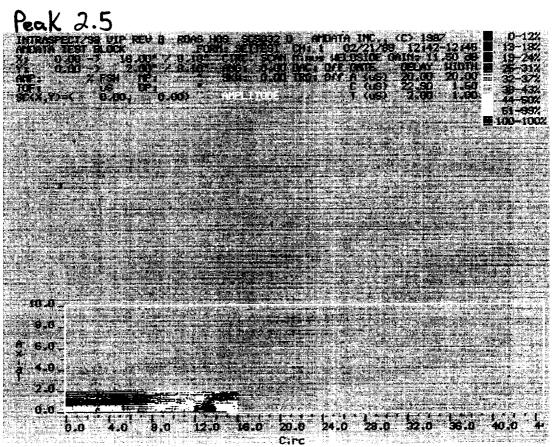
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

					,	

X-Axis Scan Velocity DRIGHM PAGE

COLOR PHOTOGRAPH



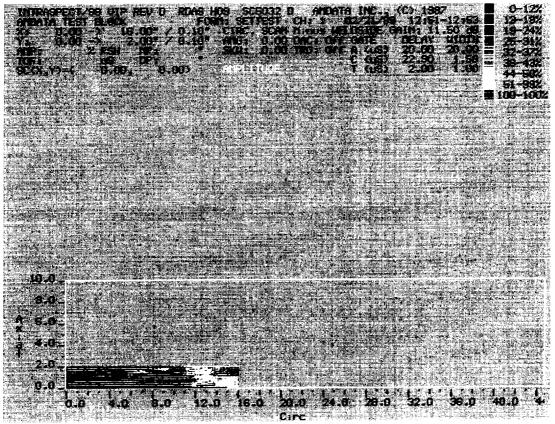


Note - darkened areas of scan are due to a loss of couplant caused by tilting x-ducir.

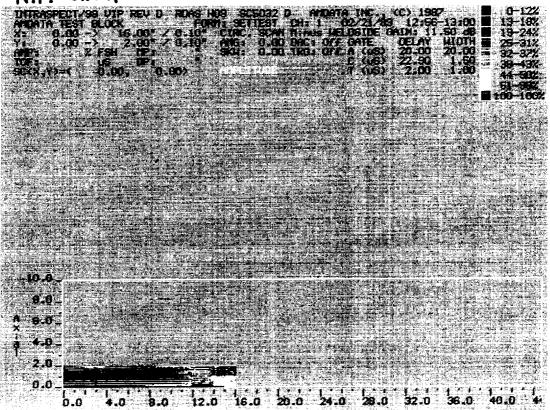
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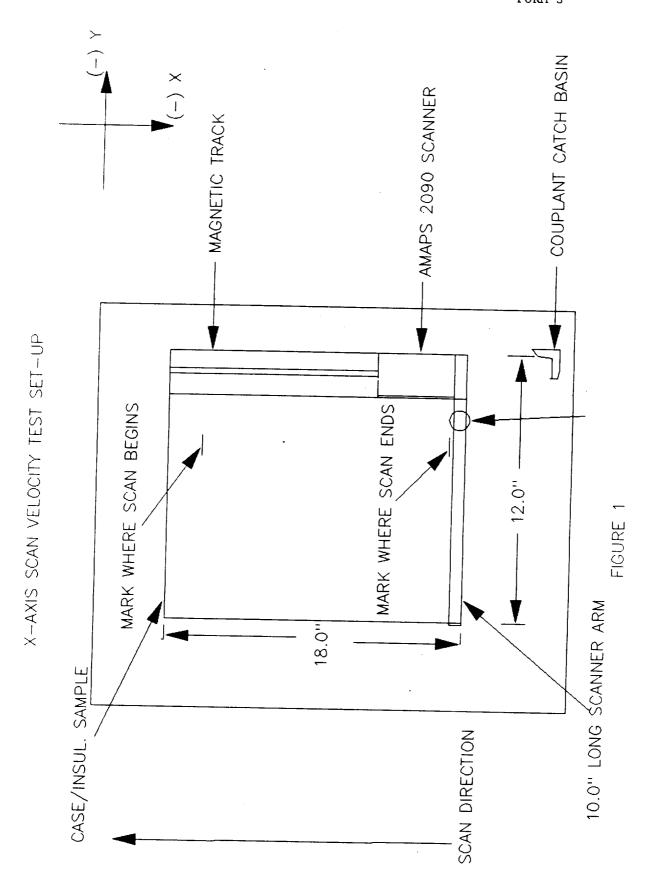


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B-196 B-17

X-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

OPERATOR: Bran Lushing VERIFIED BY: SOFTWARE VERSION NUMBER:	SYSTEM SERIAL NUMBER: SA 5 1865 TRANSDUCER SERIAL NUMBER: RD-3 STOP WATCH MANUFACTURER: Citizen
H U	IFICATION TEST (PEAK DETECT)
PART 1. X-AXIS SCANNING VELOCITY VER	
1) COMPLETE FOLLOWING CHECK LIST BEF	
	COMPLETED (INITIALS)
a) 5.0 MHz TRANSDUCER IS BEING US	ED <u>35</u> C
b) 10.0 IN. LONG SCANNER ARM IS B	EING USED BSC
c) SAMPLING INCREMENT IS 0.10 IN.	スぐゆ
d) X-AXIS SCAN VELOCITY IS PROGRA 4.0 IN./SEC	MED TO RSC
e) A/D SAMPLING RATE IS AT 20.0 M	761
f) SYSTEM IS PEAK DETECTING OFF T MULTIPLE BACK-WALL REFLECTION	THE EIGHTH BSC
g) FIGURE 1 OF THIS FORM HAS BEEN SO PROPER TEST SET-UP IS ACHIE	REVIEWED AS SCENER STEEL
h) PRINTER IS CONFIGURED PROPERLY	BSC
2) PERFORM TEST THREE TIMES AND RECO	10.0
TIME VEL	OCITY (16.0 IN./TIME)
RUN 1 3.7	2.7
RUN 2 3.7	17
RUN 3 3.6 2	7

(PART	1	CONT.	١
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3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY (16.0 IN./TIME)	
	RUN 1			
	RUN 2			
	RUN 3			
] ; 1	VELOCITIE PRESENTAT ATTACH IT DONE TO C FORM.	S IS WITHIN ± 0.! ION IS ACCEPTABLE TO THIS FORM, NO	THE INDICATED AND ACTUAL SCAN 5 IN./SEC., AND THE SCREEN DATA E, MAKE A HARD COPY OF THE SCREEN OTE IN THE SPACE BELOW WHAT WAS EM, AND PROCEED TO PART 2 OF THIS	
_				
-				

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	Ċ

PART 2. X-AXIS SCANNING VELOCITY (PEAK DETECT @ 2.5 IN./SEC.)
1) COMPLETE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.
COMPLETED (INITIALS)
a) X-AXIS SCAN VELOCITY IS PROGRAMMED TO 35C
b) REMAINING PARAMETERS FROM PART 1 OF THIS FORM HAVE NOT BEEN CHANGED
2) PERFORM TEST THREE TIMES AND RECORD RESULTS IN SPACE BELOW.
TIME VELOCITY (16.0 IN./TIME)
RUN 1 4.6 2.1
RUN 2 4.8 2.0
RUN 3 4.7 2.1
3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES ARE WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN PRESENTATION, ATTACH IT TO THIS FORM, AND PROCEED TO PART 3 OF THIS FORM.
IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN./SEC., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.
4) RECORD INFORMATION FROM THREE RUNS IN SPACE BELOW.
TIME VELOCITY (16.0 IN./TIME)
RUN 1
RUN 2
RUN 3

COMPLETED

Page 68

5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N , AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. X-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE X-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

a) 5.0 MHz TRANSDUCER IS BEING USED b) 10.0 IN. LONG SCANNER ARM IS BEING USED C) SAMPLING INCREMENT IS 0.10 IN. 35C d) X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC. e) A/D SAMPLING RATE IS AT 20.0 MHz BSC f) SYSTEM IS IN RF MODE G) C-SCAN GATE DELAY IS 20.0 MICROSECONDS BSC 1) C-SCAN GATE WIDTH IS 30.0 MICROSECONDS i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY CTP-0100			(INITIALS)
c) SAMPLING INCREMENT IS 0.10 IN. 35C d) X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC. e) A/D SAMPLING RATE IS AT 20.0 MHz BSC f) SYSTEM IS IN RF MODE G) C-SCAN GATE DELAY IS 20.0 MICROSECONDS h) C-SCAN GATE WIDTH IS 20.0 MICROSECONDS i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY BSC 35C 35C 35C 35C 35C 35C 35C 3	a)	5.0 MHz TRANSDUCER IS BEING USED	35
d) X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC. e) A/D SAMPLING RATE IS AT 20.0 MHz BSC f) SYSTEM IS IN RF MODE G-SCAN GATE DELAY IS 20.0 MICROSECONDS BSC 2.35 h) C-SCAN GATE WIDTH IS 30.0 MICROSECONDS i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY BSC BSC 3.5 3.5 3.5 4.0 BSC BSC 3.5 3.5 3.6 BSC 3.7 3.7 3.7 3.7 3.8 3.8 4.0 3.9 4.0 3.9 4.0 3.9 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	b)		
e) A/D SAMPLING RATE IS AT 20.0 MHz BSC f) SYSTEM IS IN RF MODE G) C-SCAN GATE DELAY IS 20.0 MICROSECONDS h) C-SCAN GATE WIDTH IS 30.0 MICROSECONDS i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY BSC BSC BSC BSC BSC BSC BSC BS	c)	SAMPLING INCREMENT IS 0.10 IN	BSC
f) SYSTEM IS IN RF MODE g) C-SCAN GATE DELAY IS 20.0 MICROSECONDS h) C-SCAN GATE WIDTH IS 20.0 MICROSECONDS i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY 35 35 35 35 35 35 35 35 35 3	d)	X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	BSC
g) C-SCAN GATE DELAY IS 20.0 MICROSECONDS 1) C-SCAN GATE WIDTH IS 20.0 MICROSECONDS 2.35 i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY 35 35 35 35 35 35 35 35 35 3	e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED j) PRINTER IS CONFIGURED PROPERLY BSC 2.35 ACHIEVED BSC 2.35 ACHIEVED BSC 2.35 ACHIEVED BSC 2.35 ACHIEVED BSC BSC 2.35 ACHIEVED BSC BSC 2.35 ACHIEVED BSC BSC BSC BSC BSC BSC BSC BS	f)		BSC
i) FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS	B5C
j) PRINTER IS CONFIGURED PROPERLY	h)	C-SCAN GATE WIDTH IS 30.9 MICROSECONDS	35
	i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	BSC
CTP-0100	j)	PRINTER IS CONFIGURED PROPERLY	39C
			CTP-0100

21	DEDEORM TEST THREE TIME	S AND RECORD RESULTS IN SPACE BELOW.
3)	TIME	(0,0) VELOCITY (16.0) VELOCITY (16.0)
	RUN 1 3.6	2.7
	RUN 2 3.6	2.7
	RUN 3 3.7	2.7
4)	IF THE DIFFERENCE BETWE VELOCITIES IS WITHIN ±	EN THE INDICATED AND ACTUAL SCAN 0.5 IN./SEC., AND THE SCREEN DATA BLE, (A) MAKE A HARD COPY OF THE SCREEN ORM, AND (B) PROCEED TO PART 4 OF
	IF THE DIFFERENCE IS GR CONNECTIONS AND VALUES	EATER THAN ± 0.5 IN., RE-CHECK ALL ENTERED INTO SET FORM. RE-CHECK TEST.
5)	RECORD INFORMATION FROM	THE THREE RUNS IN SPACE BELOW.
	TIME	VELOCITY (16.0 IN./TIME)
	RUN 1	
	RUN 2	
	RUN 3	
6)	VELOCITIES IS WITHIN ± PRESENTATION IS ACCEPTA SCREEN (B) ATTACH IT T	EN THE INDICATED AND ACTUAL SCAN 0.5 IN./SEC., AND THE SCREEN DATA BLE, (A) MAKE A HARD COPY OF THE O THIS FORM, (C) NOTE IN THE SPACE CORRECT THE PROBLEM, AND (D) PROCEED
	andingering it was determ	After conversation with AMDADA simed that the original target values in the system limitations. Therefore this test was max scan speed for given parameters.
	DDECENTATION OF THE SCR	TILL UN-RESOLVABLE, MAKE A HARD COPY EEN DISPLAY, ATTACH IT TO THIS FORM, URE REPORT, FORM N, AND NOTIFY MTI
	***NOTE: BE PREPARED TO	GIVE THE SPECIFICS OF THE PROBLEM.
		CTP-0100 Page 69

RT 4.	X-AX	IS SCANNIN	G VELOCI	TY (RF M	ODE @	2.5 IN./	SEC.)
COMP	LETE E	FOLLOWING	CHECKLIS	T BEFORE	PERFO	RMING TE	CST.
(a)		(IS SCAN V IN./SEC.					completed (initials)
(b)		AINING PAR M HAVE NOT					BSC
PERF	ORM TE	ST THREE	TIMES AN	D RECORD	RESUL	TS IN SP	ACE BELOW.
		TIME	V	ELOCITY		IN./TIME	()
RUN	1	4.7		2.1			
RUN	2	4.7		2.1			
RUN	3	48		2.0			
VELOO IS AG (B) A WAS I UNIN	CITIES CCEPTA ATTACH DONE I TERRUP	BLE, (A)	N ± 0.5 MAKE A H IS FORM, THE PRO ER SUPPL	IN./SEC. ARD COPY (C) NOT BLEM, AN	, AND OF TH E IN T D (D) CATION	THE SCRE E SCREEN HE SPACE PROCEED TEST.	EN PRESENTATION PRESENTATION BELOW WHAT TO THE
IF T	HE DIF	FERENCE I	S GREATE	R THAN ±	0.5 I	N./SEC	RE-CHECK
							RE-PERFORM

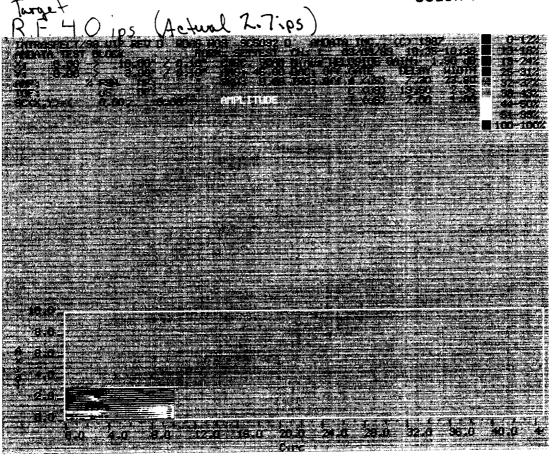
CTP-0100 Page 70

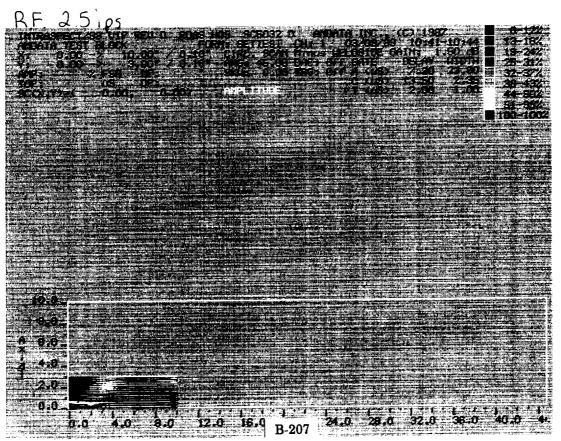
TEST.

4)	RECORD THE	INFORMATION FRO	M THE THREE RUNS IN SPACE	BELOW.
		TIME	VELOCITY (16.0 IN./TIME)	
	RUN 1			
	RUN 2			
	RUN 3			-
5)	VELOCITIES IS ACCEPTA (B) ATTACH WAS DONE I UNINTERRUP	S IS WITHIN ± 0.5 ABLE, (A) MAKE A H IT TO THIS FORM TO CORRECT THE PR PTABLE POWER SUPP	THE INDICATED AND ACTUAL IN./SEC., AND THE SCREEN HARD COPY OF THE SCREEN FOR AND THE SPACE BROBLEM, AND (D) PROCEED TO PLY VERIFICATION TEST.	PRESENTATION, PRESENTATION, BELOW WHAT
	IF THE DIE	FEERENCE WAS STII	LL UN-RESOLVABLE, (A) COME ORM N, AND (B) NOTIFY MTI	PLETE A ELECTRONIC
	MA I NTENANO	CE.	VE THE SPECIFICS OF THE PR	

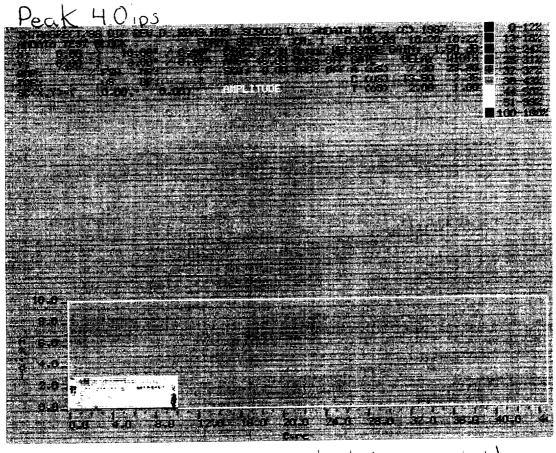
X-Axis Scan Velocity

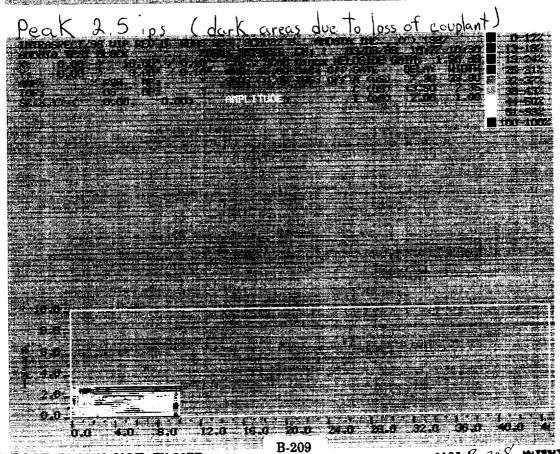
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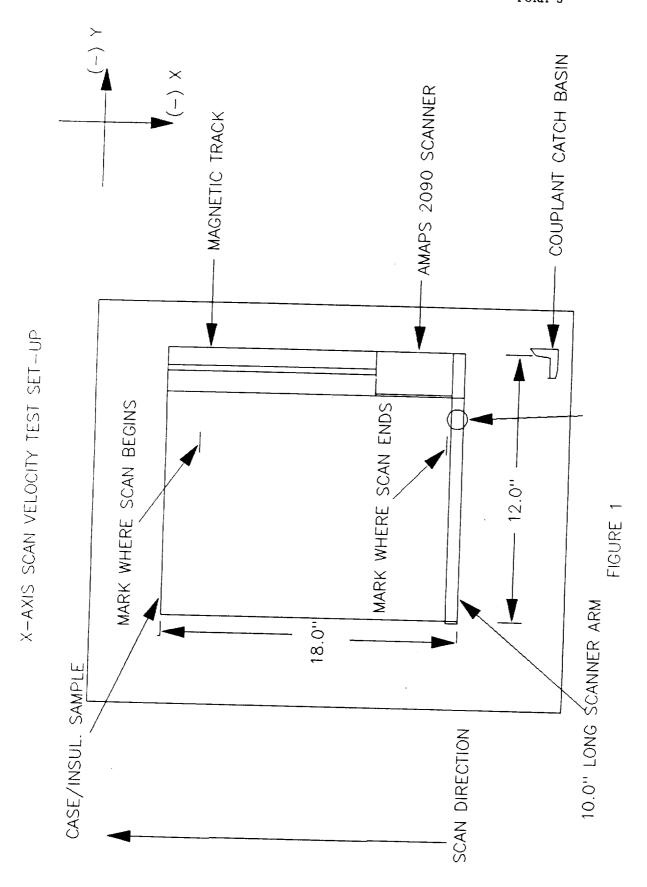




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X-AXIS SCANNING VELOCITY VERIFICATION TESTS PEAK DETECT AND RF MODES

DATE:		23 1	May 84			SYSTEM SI	369		
OPERA			Lushing		i	TRANSDUCI	er seri ND-3	AL NU	MBER:
VERIF	TE	<u></u>			•	STOP WATO	CH MANU	FACTU	RER:
		1	1, / > 1/4 /		,	<u> </u>	zrn		
SOFTW	VAR.	e vers 4,0	ION NUMBER:	<u>.</u>					
			IS SCANNING						DETECT
1) 0	COM	PLETE	FOLLOWING CH	ECK LIST	BEFO	RE PERFO	RMING I	EST.	
						_			LETED TIALS)
a)			Iz TRANSDUCER						
b))	10.0 I	N. LONG SCAN	INER ARM	IS BE	ING USED		_B	
c))	SAMPLI	NG INCREMENT	r IS 0.10	IN.	• • • • • •		_BC	54
d))	X-AXIS 4.0 IN	S SCAN VELOCI	TY IS PRO	OGRAM	ED TO		<u>Bs</u>	
e))	A/D SA	AMPLING RATE	IS AT 20	.O MH	(z		<u>B</u>	<u>.C</u>
f))	SYSTEN MULTI	M IS PEAK DET PLE BACK-WALI	TECTING O	FF TH	E EIGHTH		BS	_
g))	FIGURE	E 1 OF THIS E	FORM HAS :	BEEN CHIEV	REVIEWED ED	AS	<u>35</u>	Ċ
h)	PRINT	ER IS CONFIGU	JRED PROP	ERLY			<u>BS</u>	<u>C</u>
2) I	PER	REORM :	TEST THREE T	IMES AND	RECOF	D RESULT	S IN S	PACE E	BELOW.
			TIME		VELOC	CITY (16.	O IN./	TIME)	
	RU	JN 1	5.84			2.7 ips			
	RU	JN 2	5,93			2.7 ips			
		JN 3	5.88			۱ ۲.۶			

(PART 1 CONT.)

3) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN DATA PRESENTATION IS ACCEPTABLE, MAKE A HARD COPY OF THE SCREEN AND ATTACH IT TO THIS FORM, PROCEED TO PART 2 OF THIS FORM.

IF THE DIFFERENCE IS GREATER THAN \pm 0.5 IN., RE-CHECK ALL CONNECTIONS AND VALUES ENTERED INTO SET FORM. RE-PERFORM TEST.

4) RECORD THE INFORMATION FROM THREE RUNS IN SPACE BELOW.

		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1		
	RUN 2		·
	RUN 3		
5)	VELOCITI PRESENTA ATTACH I DONE TO FORM.	ES IS WITHIN ± 0.5 ATION IS ACCEPTABLE TT TO THIS FORM, NO	THE INDICATED AND ACTUAL SCAN IN./SEC., AND THE SCREEN DATA , MAKE A HARD COPY OF THE SCREEN, TE IN THE SPACE BELOW WHAT WAS M, AND PROCEED TO PART 2 OF THIS
			·

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) MAKE A HARD COPY PRESENTATION OF THE SCREEN DISPLAY, (B) ATTACH IT TO THIS FORM, (C) COMPLETE A PROBLEM /FAILURE REPORT, FORM N, AND (D) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PAGE	3
FORM	Ċ

PARI	2. X-	AXIS SCANNING V	ELOCITY (PEAK DETECT @ 2.5 IN./SEC.)
1)	COMPLET	E FOLLOWING CHE	CK LIST BEFORE PERFORMING TEST.
-,			COMPLETED (INITIALS)
á	a) X-AX 2.5	IS SCAN VELOCIT	y is programmed to 35C
)	o) REMA FORM	INING PARAMETER HAVE NOT BEEN	S FROM PART 1 OF THIS CHANGED
2)	PERFORM	I TEST THREE TIM	ES AND RECORD RESULTS IN SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1	7.58	2.1 ips
		7.62	
•		7.55	2.1.05
3)	VELOCI' PRESEN' PRESEN' OF THI	FIES ARE WITHIN FATION IS ACCEPT FATION, ATTACH I S FORM.	EEN THE INDICATED AND ACTUAL SCAN ± 0.5 IN./SEC., AND THE SCREEN DATA CABLE, MAKE A HARD COPY OF THE SCREEN TO THIS FORM, AND PROCEED TO PART 3
	IF THE ALL CO TEST.	DIFFERENCE IS ON NECTIONS AND VA	GREATER THAN ± 0.5 IN./SEC., RE-CHECK ALUES ENTERED INTO SET FORM. RE-PERFORM
4)	RECORD	INFORMATION FRO	OM THREE RUNS IN SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIME)
	RUN 1		
	RUN 2		
	RUN 3		

5) IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED PART 3 OF THIS FORM.

IF THE DIFFERENCE IS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N , AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

PART 3. X-AXIS SCANNING VELOCITY VERIFICATION TEST (RF MODE)

- 1) PERFORM STEPS 1 THROUGH 5 OF THE X-AXIS SCANNING VELOCITY VERIFICATION TEST (PEAK DETECT) EXCEPT FOR THE FOLLOWING:
 - A) PLACE SYSTEM IN RF MODE
 - B) SET C-SCAN GATE DELAY TO 20 MICROSECONDS
 - C) SET C-SCAN GATE WIDTH TO 30 MICROSECONDS
- 2) COMPLETE THE FOLLOWING CHECK LIST BEFORE PERFORMING TEST.

		COMPLETED (INITIALS)
a)	5.0 MHz TRANSDUCER IS BEING USED	<u> 35C</u>
b)	10.0 IN. LONG SCANNER ARM IS BEING USED	BSC
c)	SAMPLING INCREMENT IS 0.10 IN	BSC
d)	X-AXIS SCAN VELOCITY IS PROGRAMED TO 4.0 IN./SEC	BSC
e)	A/D SAMPLING RATE IS AT 20.0 MHz	BSC
f)	SYSTEM IS IN RF MODE	BSC
g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS	BSC
h)	C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	BSC_
i)	FIGURE 1 OF THIS FORM HAS BEEN REVIEWED SO PROPER TEST SET-UP IS ACHIEVED	BSC
j)	PRINTER IS CONFIGURED PROPERLY	BSC
		CTP-0100 Page 68

3)	PERFORM T	EST THREE TIMES	AND RECORD RESULTS IN SPACE	BELOW.
		TIME	VELOCITY (16.0 IN./TIME)	
	RUN 1	5.80	2.7	
	RUN 2	_5.83	2.7	
		5.78	2.7	
4)	VELOCITIE PRESENTAT AND ATTAC THIS FORM	ES IS WITHIN ± 0 FION IS ACCEPTAB CH IT TO THIS FO M.	N THE INDICATED AND ACTUAL SO .5 IN./SEC., AND THE SCREEN D LE, (A) MAKE A HARD COPY OF T RM, AND (B) PROCEED TO PART 4	THE SCREEN OF
	CONNECTIO	ONS AND VALUES E	ATER THAN ± 0.5 IN., RE-CHECK INTERED INTO SET FORM. RE-CHE	
5)	RECORD II	NFORMATION FROM	THE THREE RUNS IN SPACE BELOW	٧.
		TIME	VELOCITY (16.0 IN./TIME)	•
	RUN 1			
	RUN 2			
	RUN 3			
6)	VELOCITI PRESENTA SCREEN, BELOW WH TO PART	ES IS WITHIN ± (TION IS ACCEPTAL (B) ATTACH IT TO AT WAS DONE TO (4 OF THIS FORM.	EN THE INDICATED AND ACTUAL SOCIED SOCIED SEC., AND THE SCREEN SLE, (A) MAKE A HARD COPY OF THIS FORM, (C) NOTE IN THE CORRECT THE PROBLEM, AND (D)	THE SPACE PROCEED
	PRESENTA COMPLETE	test plan had extended in cameters DIFFERENCE WAS S	ter conversation with Amore remained that the original tury needed the system limitations. The commander to find max scan specific un-resolvable, Make a HAEEN DISPLAY, ATTACH IT TO THIS URE REPORT, FORM N, AND NOTIFIED	ARD COPY
			GIVE THE SPECIFICS OF THE PR	OBLEM.
	· · · MOTE:	. DE INEIMAD TO		CTP-0100 Page 69

PAI	RT 4. X	-AXIS SCANNING V	FLOCITY (RF MODE @ 2.5 IN	./SEC.)
1)	COMPLE	TE FOLLOWING CHE	ECKLIST BEFORE PERFORMING	TEST.
	(a) 2	C-AXIS SCAN VELO 2.5 IN./SEC	CITY IS PROGRAMMED TO	completed (INITIALS)
	(b) I	REMAINING PARAME ORM HAVE NOT BE	TERS FROM PART 3 OF THIS EN CHANGED	BSC
2)	PERFORM	TEST THREE TIM	ES AND RECORD RESULTS IN S	SPACE BELOW.
		TIME	VELOCITY (16.0 IN./TIM	IE)
	RUN 1	7.50	2.1 ips	
	RUN 2	7.47	2.1 105	
	RUN 3	753	2.1.10	
3)	IS ACCE (B) ATT	TES IS WITHIN ± PTABLE, (A) MAKE ACH IT TO THIS E E TO CORRECT THE	EEN THE INDICATED AND ACTU 0.5 IN./SEC., AND THE SCR E A HARD COPY OF THE SCREE FORM, (C) NOTE IN THE SPAC E PROBLEM, AND (D) PROCEED SUPPLY VERIFICATION TEST.	EEN PRESENTATION PRESENTATION,
	CORRECT	IVE ACTION(S)		
	IF THE I ALL CONN TEST.	OIFFERENCE IS GR MECTIONS AND VAL	EATER THAN ± 0.5 IN./SEC. UES ENTERED INTO SET FORM.	, RE-CHECK RE-PERFORM

PAGE 7 FORM J

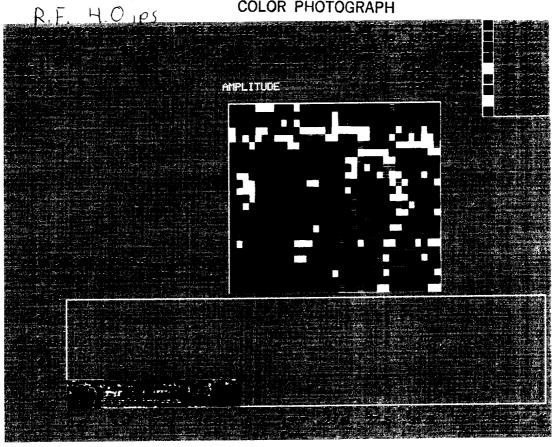
4)	RECORD THE INFORMATION FROM THE THREE RUNS IN SPACE BELOW.
	TIME VELOCITY (16.0 IN./TIME)
	RUN 1
	RUN 2
	RUN 3
5)	IF THE DIFFERENCE BETWEEN THE INDICATED AND ACTUAL SCAN VELOCITIES IS WITHIN ± 0.5 IN./SEC., AND THE SCREEN PRESENTATION IS ACCEPTABLE, (A) MAKE A HARD COPY OF THE SCREEN PRESENTATION, (B) ATTACH IT TO THIS FORM, (C) NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND (D) PROCEED TO THE UNINTERRUPTABLE POWER SUPPLY VERIFICATION TEST. CORRECTIVE ACTION(S)
	IF THE DIFFERENCE WAS STILL UN-RESOLVABLE, (A) COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND (B) NOTIFY MTI ELECTRONIC MAINTENANCE.

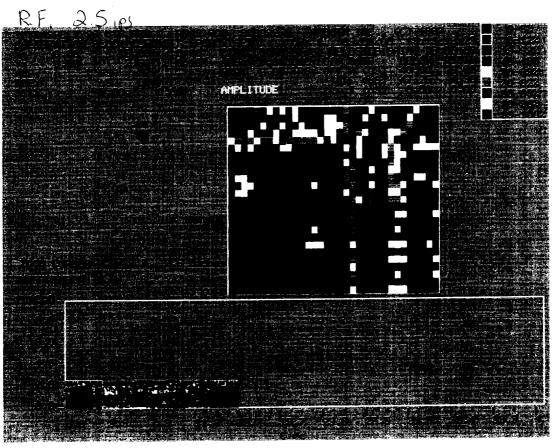
***NOTE: BE PREPARED TO GIVE THE SPECIFICS OF THE PROBLEM.

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X-X X-Axis Scan Velocity

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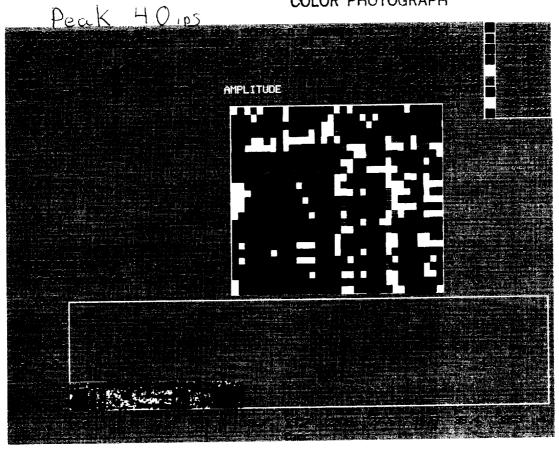


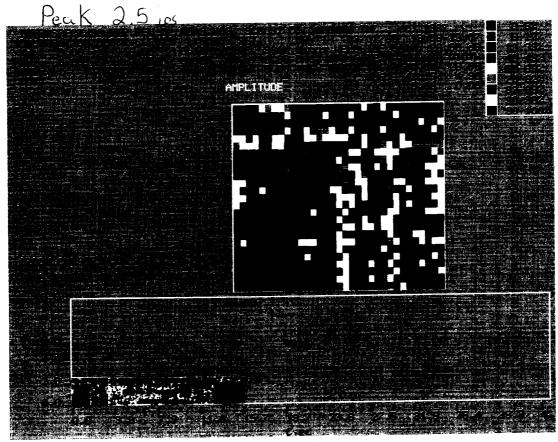


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X-Axis Scan Velocity

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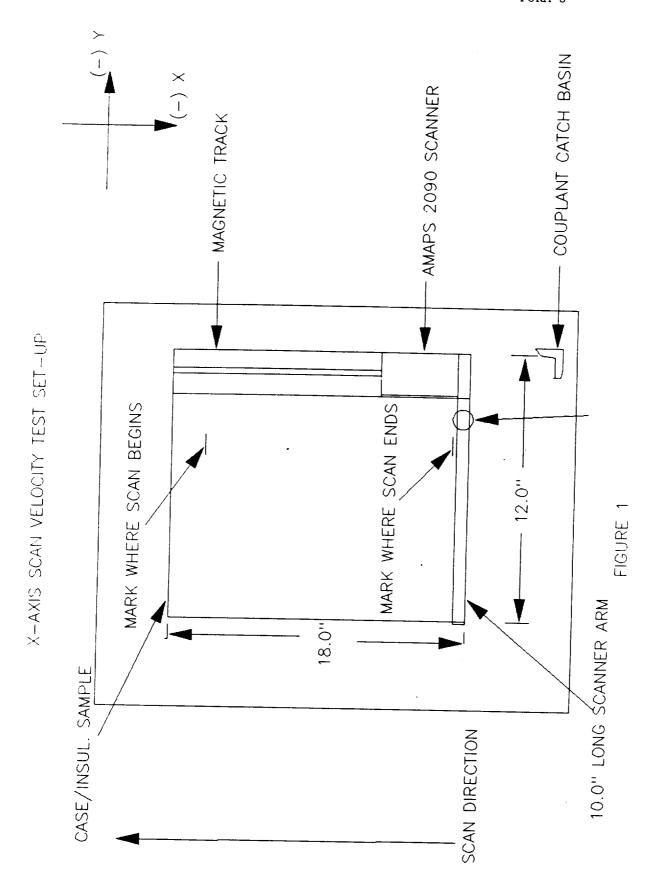


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CTP-0100 Page 72

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PAGE 1 FORM K

UNINTERUPTABLE POWER SUPPLY VERIFICATION TEST

DATE: 5/13/94

SYSTEM SERIAL NUMBER: 5-457866

TOPAZ SERIAL NUMBER:

5-45184-3

TRANSDUCER SERIAL NUMBER:

T 5359

VEDIETED BY:

OPERATOR: B Custana

Mark Same

SOFTWARE VERSION NUMBER: 4

1) COMPLETE THE CHECK LIST BEFORE PERFORMING THE TEST.

COMPLETED

- O 5.0 MHz TRANSDUCER IS BEING USED
- O 10.0" LONG SCANNER ARM IS BEING USED
- O TOPAZ UNINTERUPTABLE POWER SUPPLY HAS BEEN SUFFICIENTLY CHARGED ***NOTE: IF THE TOPAZ HAS NOT BEEN CHARGED PROPERLY, THIS TEST WILL TERMINATE HERE UNTIL THE TOPAZ IS PROPERLY CHARGED.
- O SYSTEM IS IN THE RF MODE
- O C-SCAN GATE DELAY IS AT 20.0 MICROSECONDS
- O C-SCAN GATE WIDTH IS AT 30-0 MICROSECONDS
- O FIGURE 1 OF THIS FORM HAS BEEN REVIEW AS SO A PROPER TEST CONFIGURATION IS ACHIEVED
- O OPERATOR IS FAMILIAR WITH AMDATA ENGINEERING SPECIFICATION 870128, SECTION 1.0, SUB SECTION "UNINTERUPTABLE POWER SYSTEM (UPS) AND LINE FILTER.
- O SCAN WILL COVER A 16.0" AXIAL BY 10.0" CIRCUMFERENTIAL AREA

ORIGINAL PAGE IS OF POOR QUALITY 2) THERE WILL BE THREE RUNS OF THIS TEST, FILE NAMES WILL BE:

TEST RUN #	FILE NAME	
1	SETPWR1 Power skatcher at 4000	ار ا
2	SETPWR2 Power shot down at 3.0	<u>"</u> "
3	SETPWR3 Power shutdown at 2.0	" 4

- 3) BEGIN SCAN, ALLOW AT LEAST 5 PASSES OF THE TRANSDUCER OVER THE MEMBRANE SAMPLE BEFORE DISCONNECTING THE MAIN ELECTRICAL LINE.
- 4) COMPLETE EACH PART OF THIS CHART IN ACCORDANCE WITH THE TEST RUN NUMBER. ALSO PROVIDE A HARD COPY OF BOTH THE B AND C SCANS FROM EACH TEST RUN.
 - ***NOTE: IF ANY ONE OF THE THREE TEST RUNS DOES NOT PRODUCE A DATA FILE WITH PROPERLY STORED A AND C SCANS, COMPLETE THE FOLLOWING:
 - a) CHECK ALL CONNECTIONS
 - b) CHECK ALL ENTRIES INTO THE SET FORMS
 - C) VERIFY THAT NONE OF THE UPS LIMITATIONS HAVE BEEN EXCEEDED PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 1.0, RE-PERFORM TEST.
 - d) IF PROBLEM STILL PERSISTS, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

(4 CONT.)

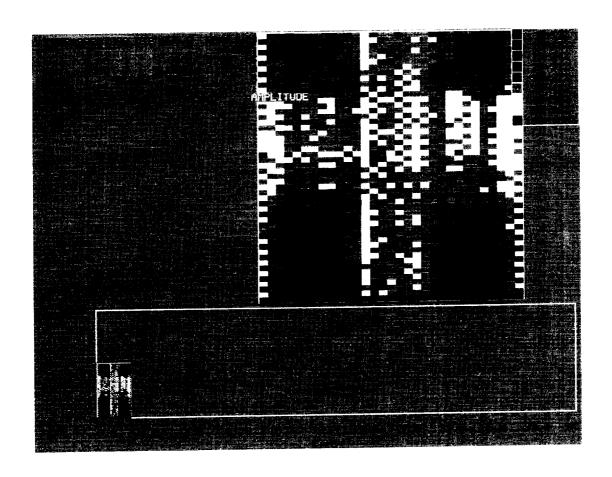
TEST RUN NUMBER (CIRCLE YES OR NO)

!	1	2	3
PROPER DATA STORAGE ACHIEVED	YES	YES	YES NO
WAS DATA FILE ABLE TO BE RE ACCESSED	YES	YES NO	YES NO
WERE A AND C SCAN PRESENTATIONS COMPLETE	YES NO	YES NO	YES NO

REMARK ANY OF	ON A	NY COI	RRECTIV	VE ACT	CIONS ——	TAKEN TO	RESOLVE	PROBLEMS	DURING
			······································						

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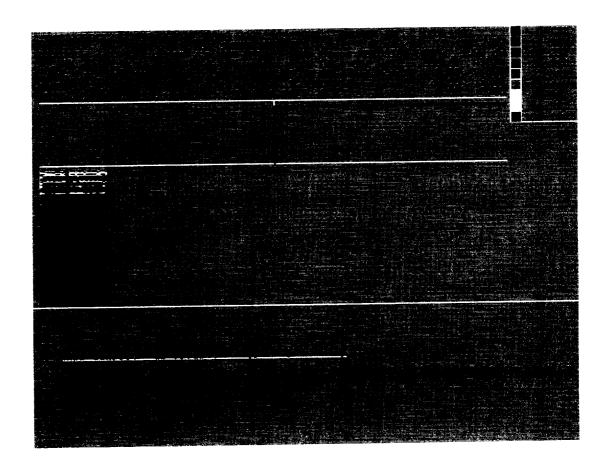
Scipur I Power shot from all



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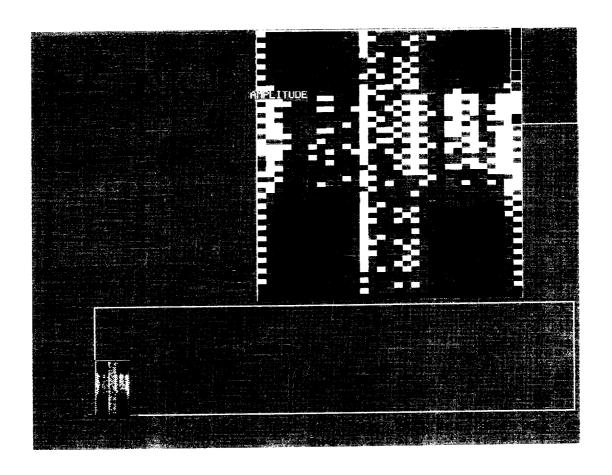
Setpurl Power shutdown at 4.0"y



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Setpur II Power shutoff at 3.0"y

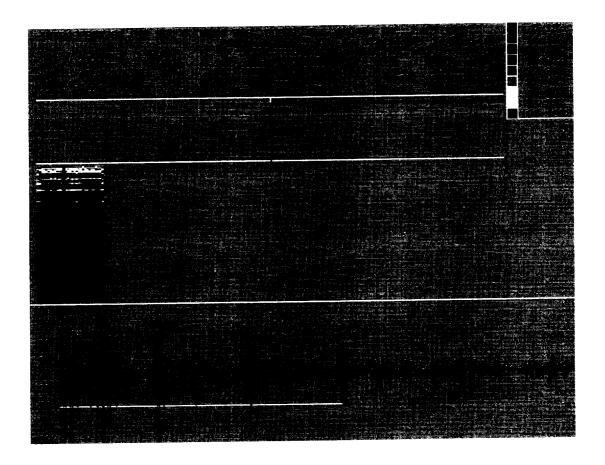


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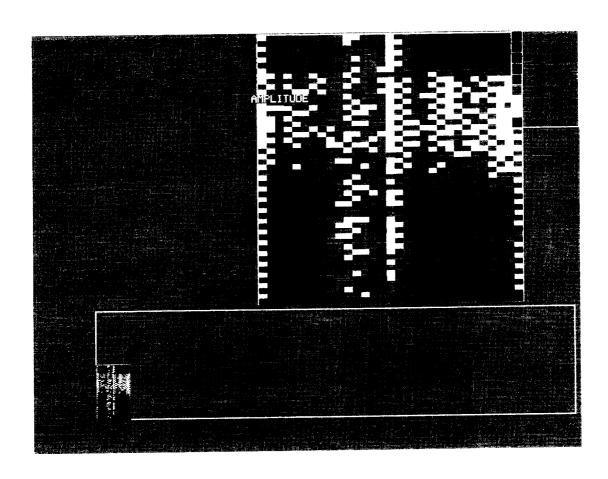
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SetpurII Power shutoff at 30"y



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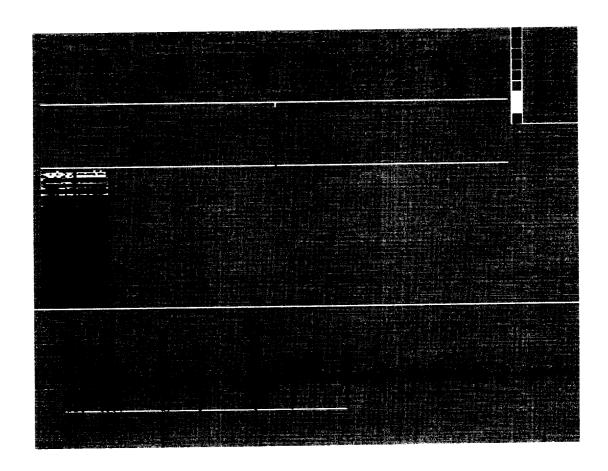
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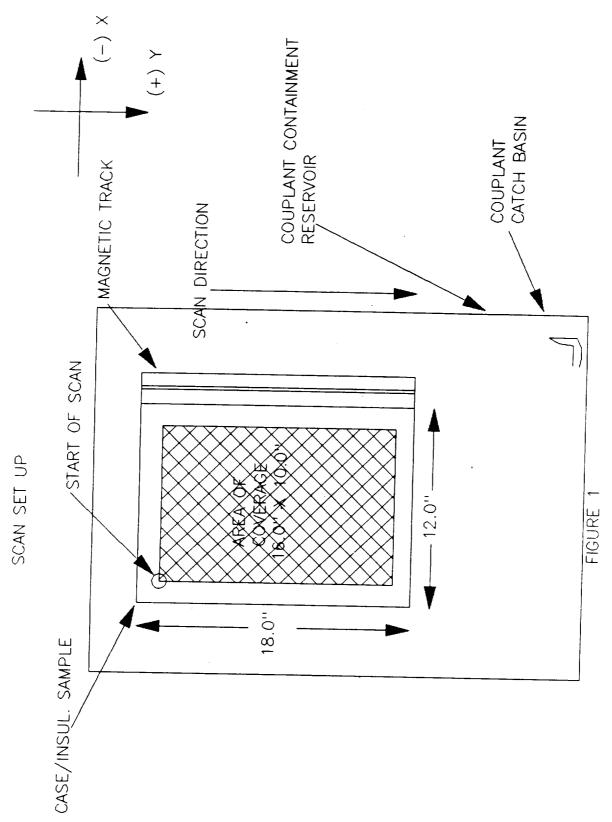
3etpur III Power shutoff at 20"y



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UNINTERRUPTABLE POWER SUPPLY (UPS) VERIFICATION TEST

DAT	E:	1 Fab 89	SYSTEM SERIAL 54-51868	<u> </u>
OPE	RATOR	2: Band Cushing	ropaz serial n SA51868-9	
	IFIE		ransducer ser SA 51868-9	IAL NUMBER: T8353
SOF'	TWARE	VERSION NUMBER:		
1)	COM	PLETE THE CHECKLIST BEFORE PERFORM	RMING THE TEST	
				COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USE		<u>BSC</u>
	b)	10.0 IN. LONG SCANNER ARM IS BE	ING USED	BSC.
		TOPAZ UPS HAS BEEN SUFFICIENTLY		<u> </u>
	**	*NOTE: IF THE TOPAZ HAS NOT BEEN PROPERLY, THIS TEST WILL HERE UNTIL THE TOPAZ IS P	TERMINATE	D.
	d)	SYSTEM IS IN THE RF MODE		<u>B5C</u>
		C-SCAN GATE DELAY IS AT 20.0 MI		BSC
	f)	C-SCAN GATE WIDTH IS AT 30.0 MI	CROSECONDS	BSC
	g)	FIGURE 1 OF THIS FORM HAS BEEN SO A PROPER TEST CONFIGURATION	REVIEW AS IS ACHIEVED	<u>BSC</u>
	h)	OPERATOR IS FAMILIAR WITH AMDAT SPECIFICATION 870128, SECTION 1 "UNINTERRUPTABLE POWER SYSTEM (FILTER"	.O, SUBSECTION UPS) AND LINE	BSC
	i)	10.6	5.0 L BY 10.0 IN.	BSC

2) THERE WILL BE THREE RUNS OF THIS TEST, FILE NAMES WILL BE:

TEST RUN #	FILE NAME	
1	SETPWR1	Sr Power shutdown at 4.0"
2	SETPWR2	power shutdown at 3.0"
3	SETPWR3	power shutdown at 2.0".5" data saved

- 3) BEGIN SCAN, ALLOW AT LEAST 5 PASSES OF THE TRANSDUCER OVER THE MEMBRANE SAMPLE BEFORE DISCONNECTING THE MAIN ELECTRICAL LINE.
- 4) COMPLETE EACH PART OF THIS CHART IN ACCORDANCE WITH THE TEST RUN NUMBER. ALSO PROVIDE A HARD COPY OF BOTH THE B AND C SCANS FROM EACH TEST RUN.
 - ***NOTE: IF ANY ONE OF THE THREE TEST RUNS DOES NOT PRODUCE A DATA FILE WITH PROPERLY STORED A AND C SCANS, COMPLETE THE FOLLOWING:
 - a) CHECK ALL CONNECTIONS
 - b) CHECK ALL ENTRIES INTO THE SET FORMS
 - c) VERIFY THAT NONE OF THE UPS LIMITATIONS HAVE BEEN EXCEEDED PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 1.0, RE-PERFORM TEST.
 - d) IF PROBLEM STILL PERSISTS, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

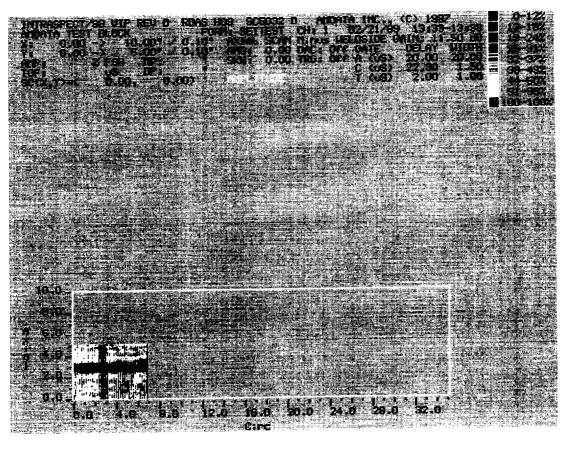
(4 CONT.)

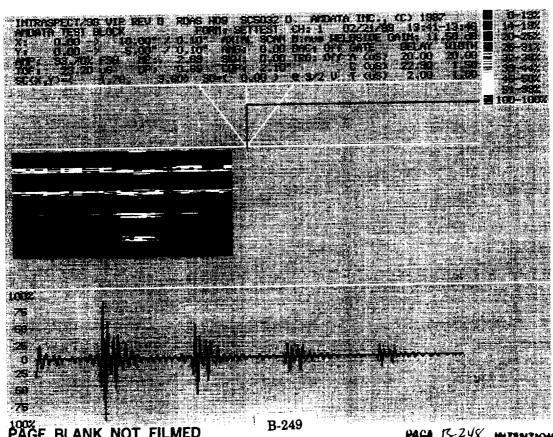
TEST RUN NUMBER (CIRCLE YES OR NO)

!	1	2	3
PROPER DATA STORAGE	YES	YES	YES)
ACHIEVED	NO	NO	NO
WAS DATA FILE ABLE	YES	YES	YES
TO BE RE ACCESSED	NO	NO	NO
WERE A AND C SCAN PRESENTATIONS COMPLETE	YES	YES	YES
	NO	NO	NO

REMARK	ON AN	Y COR	RECTITEST	VE AC	TIONS	TAKEN	TO	RESOLVE	PROBLEMS	DURING

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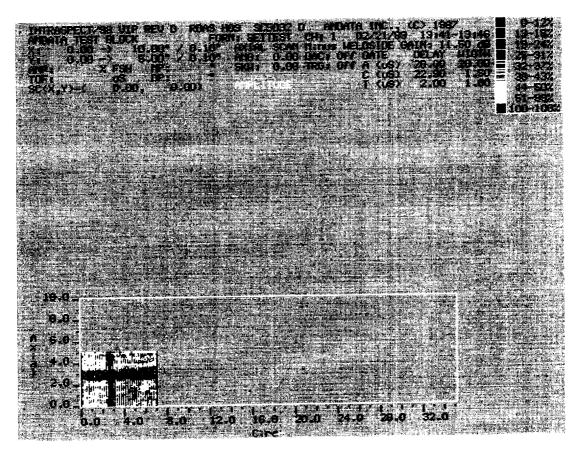


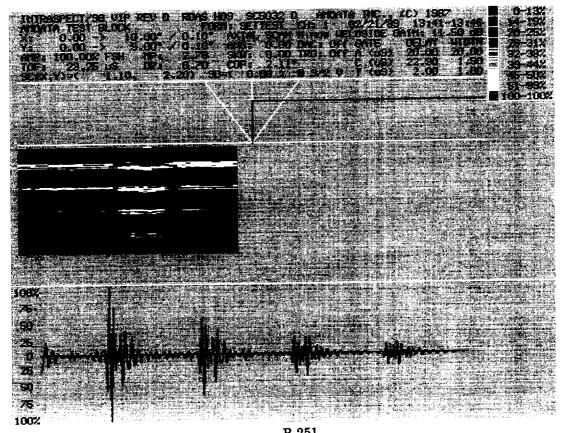
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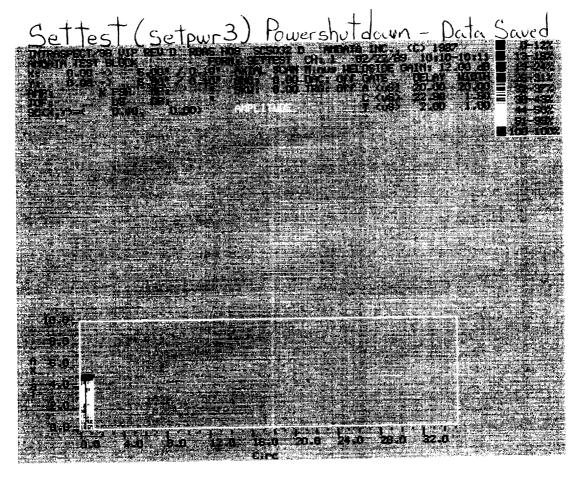
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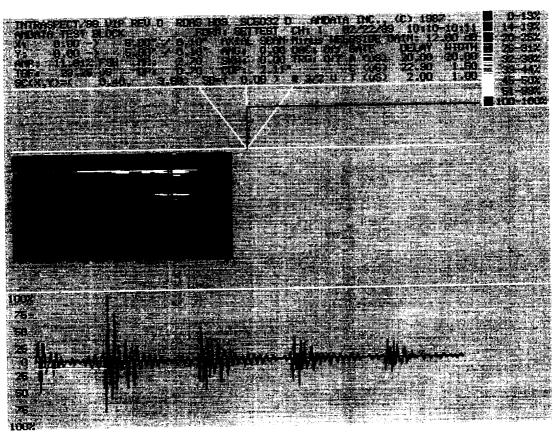




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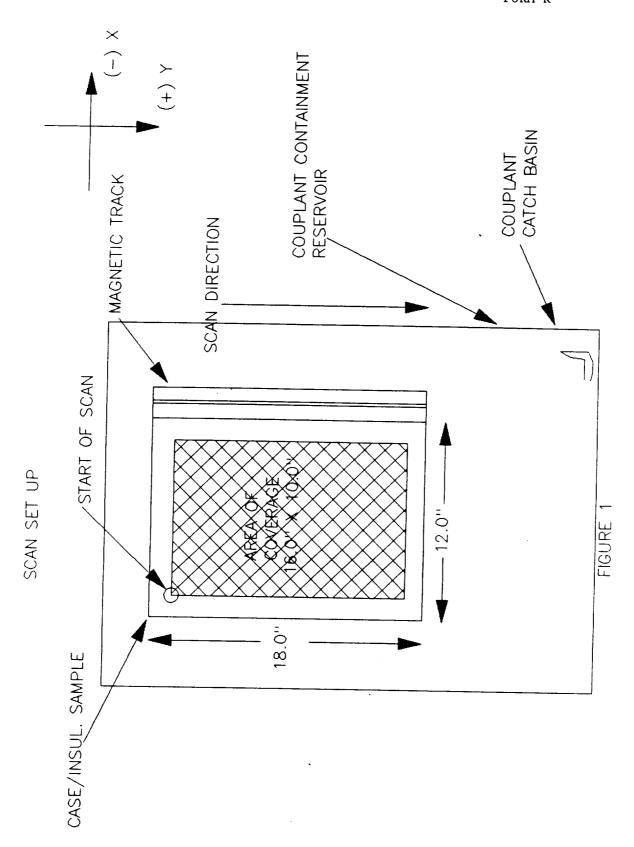
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2) THERE WILL BE THREE RUNS OF THIS TEST, FILE NAMES WILL BE:

TEST RUN #	FILE NAME
1	SETPWRI power shutdown at 40"
2	SETPWRI power shutdown at 40" SETPWR2 power shutdown at 30"
3	SETPWR3 power shutdown at .5" data saved

- 3) BEGIN SCAN, ALLOW AT LEAST 5 PASSES OF THE TRANSDUCER OVER THE MEMBRANE SAMPLE BEFORE DISCONNECTING THE MAIN ELECTRICAL LINE.
- 4) COMPLETE EACH PART OF THIS CHART IN ACCORDANCE WITH THE TEST RUN NUMBER. ALSO PROVIDE A HARD COPY OF BOTH THE B AND C SCANS FROM EACH TEST RUN.
 - ***NOTE: IF ANY ONE OF THE THREE TEST RUNS DOES NOT PRODUCE A DATA FILE WITH PROPERLY STORED A AND C SCANS, COMPLETE THE FOLLOWING:
 - a) CHECK ALL CONNECTIONS
 - b) CHECK ALL ENTRIES INTO THE SET FORMS
 - C) VERIFY THAT NONE OF THE UPS LIMITATIONS HAVE BEEN EXCEEDED PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 1.0, RE-PERFORM TEST.
 - d) IF PROBLEM STILL PERSISTS, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

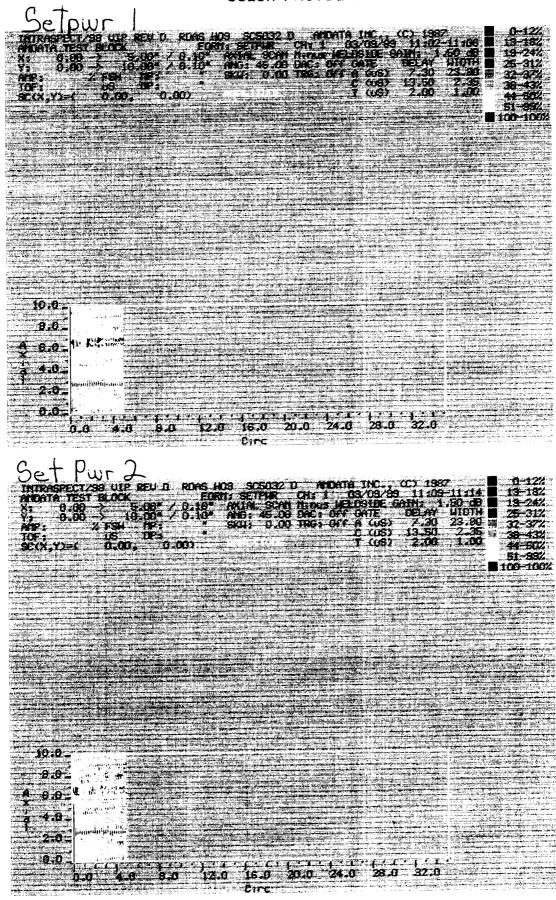
(4 CONT.)

TEST RUN NUMBER (CIRCLE YES OR NO)

	1	2	3
PROPER DATA STORAGE	YES	YES	YES
ACHIEVED		NO	NO
WAS DATA FILE ABLE	YES	YES	YES NO
TO BE RE ACCESSED	NO	NO	
WERE A AND C SCAN PRESENTATIONS COMPLETE	YES NO	YES	YES NO

REMARK ANY OF	ON ANY THE THE	CORRECTES	CTIVE ST RUI	ACTIONS	TAKEN	то	RESOLVE	PROBLEMS	DURING
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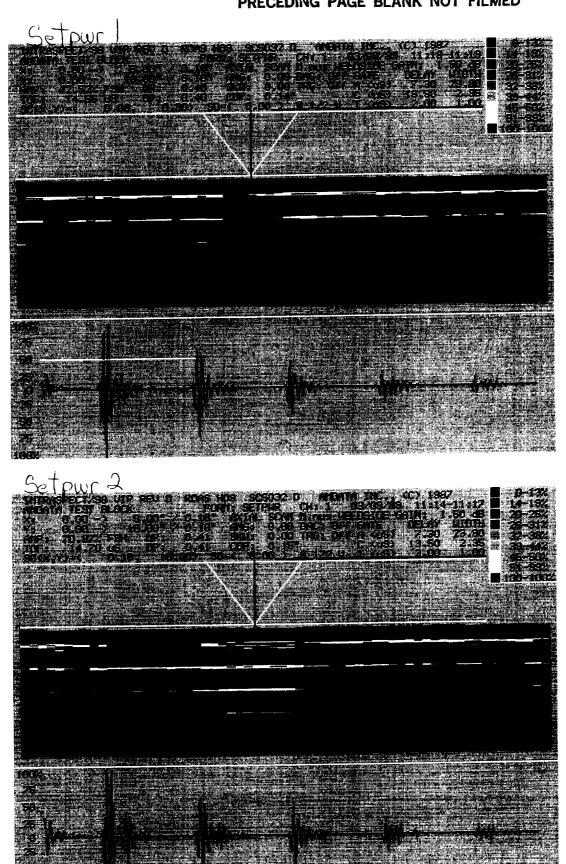
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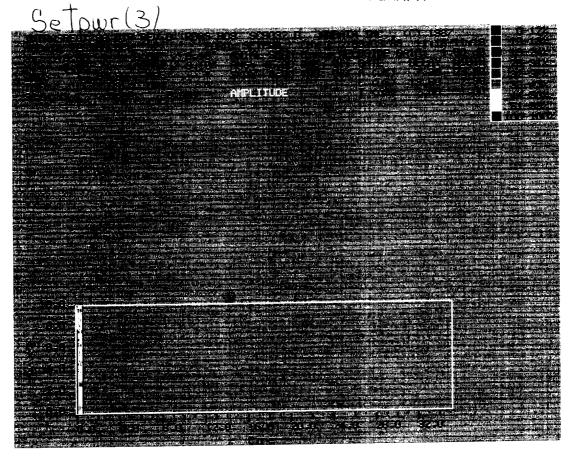
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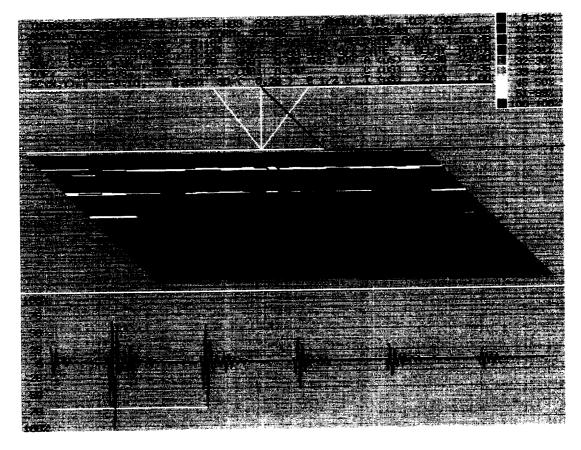
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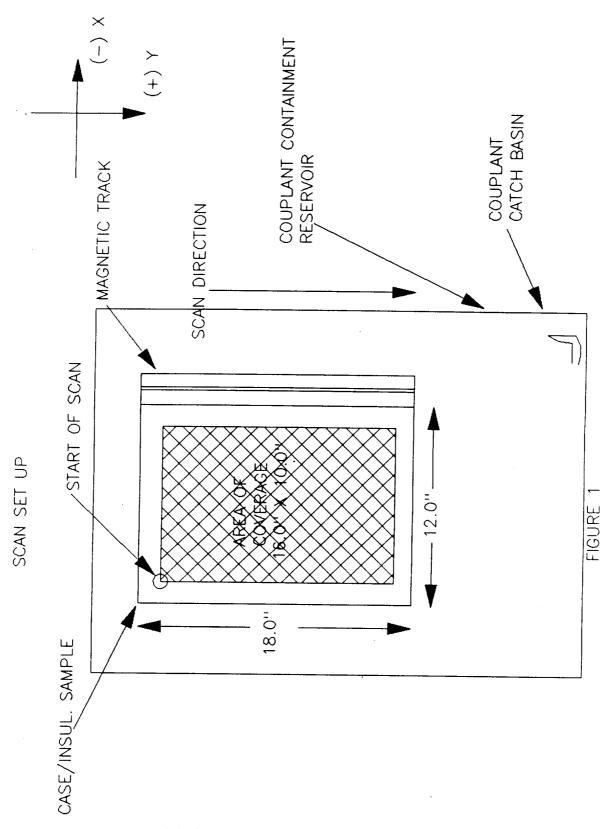




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CTP-0100 Page 77



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UNINTERUPTABLE POWER SUPPLY VERIFICATION TEST

DATE: 26 May 89

SYSTEM SERIAL NUMBER: SAS1869

OPERATOR: Brad Lushing

TOPAZ SERIAL NUMBER: SASIS69

VERIFIED BY: // </ri>

TRANSDUCER SERIAL NUMBER:

RND-3

SOFTWARE VERSION NUMBER: 4.0

1) COMPLETE THE CHECK LIST BEFORE PERFORMING THE TEST.

		COMPLETED
0	5.0 MHz TRANSDUCER IS BEING USED	BSC
0	10.0" LONG SCANNER ARM IS BEING USED	BSC
0	TOPAZ UNINTERUPTABLE POWER SUPPLY HAS BEEN SUFFICIENTLY CHARGED ***NOTE: IF THE TOPAZ HAS NOT BEEN CHARGED PROPERLY, THIS TEST WILL TERMINATE HERE UNTIL THE TOPAZ IS PROPERLY CHARGED.	BSC
		BSC
	SYSTEM IS IN THE RF MODE 46.0 H3.65	
	C-SCAN GATE DELAY IS AT 20.0 MICROSECONDS	
0	C-SCAN GATE WIDTH IS AT 30.0 MICROSECONDS	æ.
0	FIGURE 1 OF THIS FORM HAS BEEN REVIEW AS SO A PROPER TEST CONFIGURATION IS ACHIEVED	BSC
	OPERATOR IS FAMILIAR WITH AMDATA ENGINEERING SPECIFICATION 870128, SECTION 1.0, SUB SECTION "UNINTERUPTABLE POWER SYSTEM (UPS) AND LINE FILTER. 8.0	ИС
0	SCAN WILL COVER A 16.0" AXIAL BY 10.0" CIRCUMFERENTIAL AREA	

2) THERE WILL BE THREE RUNS OF THIS TEST, FILE NAMES WILL BE:

TEST RUN #	FILE NAME
1	SETPWRI - Data Saved
2	SETPWR2 - Data Saved
3	SETPWR3- Data Saved

- 3) BEGIN SCAN, ALLOW AT LEAST 5 PASSES OF THE TRANSDUCER OVER THE MEMBRANE SAMPLE BEFORE DISCONNECTING THE MAIN ELECTRICAL LINE.
- 4) COMPLETE EACH PART OF THIS CHART IN ACCORDANCE WITH THE TEST RUN NUMBER. ALSO PROVIDE A HARD COPY OF BOTH THE B AND C SCANS FROM EACH TEST RUN.
 - ***NOTE: IF ANY ONE OF THE THREE TEST RUNS DOES NOT PRODUCE A DATA FILE WITH PROPERLY STORED A AND C SCANS, COMPLETE THE FOLLOWING:
 - a) CHECK ALL CONNECTIONS
 - b) CHECK ALL ENTRIES INTO THE SET FORMS
 - VERIFY THAT NONE OF THE UPS LIMITATIONS HAVE BEEN EXCEEDED PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 1.0, RE-PERFORM TEST.
 - d) IF PROBLEM STILL PERSISTS, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

(4 CONT.)

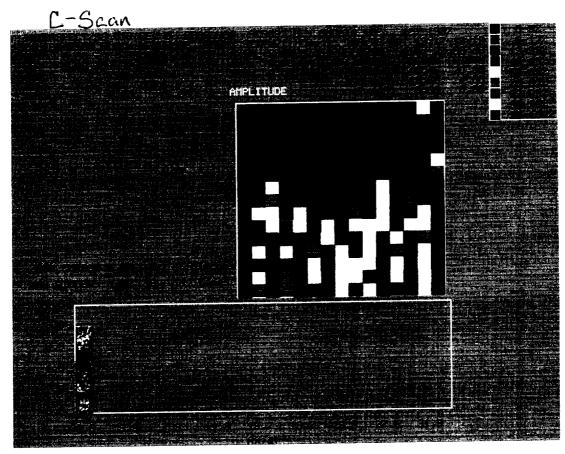
TEST RUN NUMBER (CIRCLE YES OR NO)

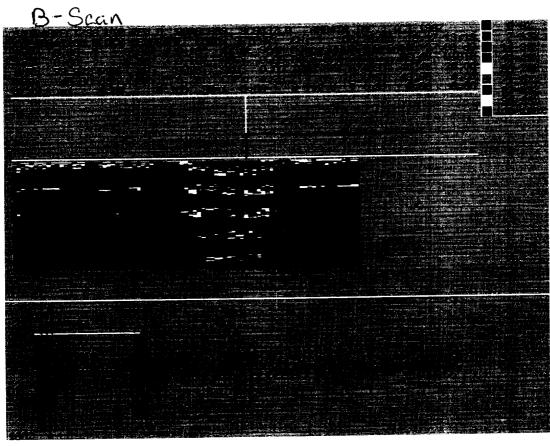
!	1	2	3
PROPER DATA STORAGE	YES	YES	YES
ACHIEVED	NO	NO	NO
WAS DATA FILE ABLE	YES	YES	YES
TO BE RE ACCESSED	NO	NO	NO
WERE A AND C SCAN PRESENTATIONS COMPLETE	YES	YES NO	YES NO

REMARK	ON AN	Y COF	RECT	IVE RUI	ACTION:	S TAKEN	TO	RESOLVE	PROBLEMS	DURING
										

			
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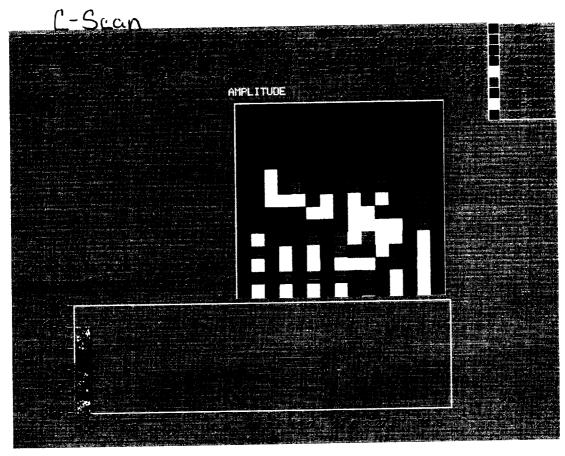


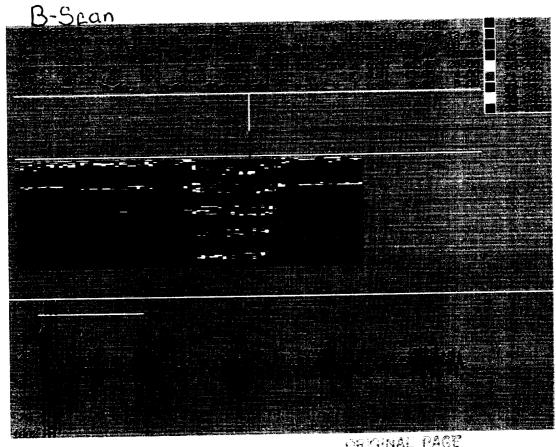


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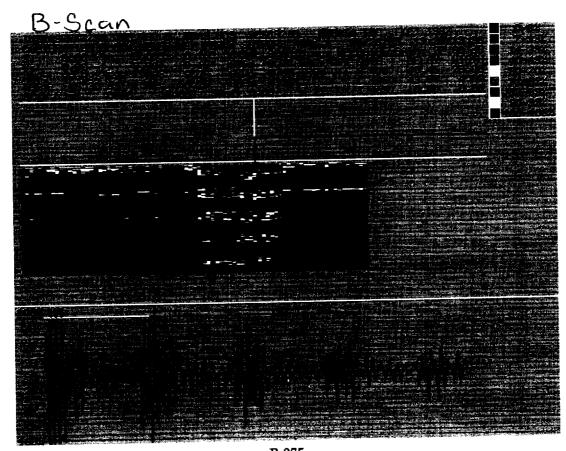
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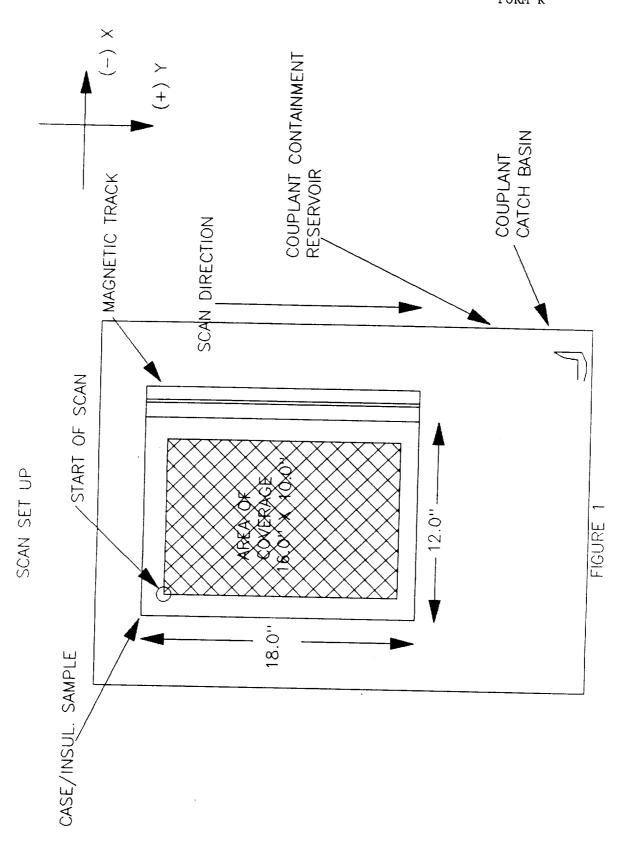
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B-276 B-277

CRT DISPLAY AND HARD COPY VERIFICATION TESTS

VER:	RATOF	B Cushing SASISA	S66: ERIAL (-') R SER	NUMBER: NUMBER: IAL NUMBER:
SEC'	TION	1:		
1)		PLETE FOLLOWING CHECK LIST BEFORE PERFORMI	NG TE	ST.
-,				COMPLETED (INIȚIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USED		-file
	b)	10.0 IN. LONG SCANNER ARM IS BEING USED		1/1/2 22
	c)	SAMPLING INCREMENT IS 0.10 IN		John 17
	d)	SYSTEM IS IN RF MODE		- 1/h
	e)	A-SCAN GATE DELAY 9.0 MICROSECONDS		
	f)	A-SCAN GATE WIDTH 51.0 MICROSECONDS		- 1 f. h.
	g)	C-SCAN GATE DELAY IS 20.0 MICROSECONDS		1/1/ Ric
	h)	C-SCAN GATE WIDTH IS 30.0 MICROSECONDS	• • •	-1/1/2 D.K.
	i)	COLOR PALETTE IN THE MASTER FORM HAS BEEN SET UP IN ACCORDANCE WITH AMDATA ENGINEERING SPECIFICATION NUMBER 870128, PAGE 73, "COLOR PALETTE".		25 <u>C</u>
	j)	SCAN WILL COVER AN AREA THAT IS 16.0 IN. AXIALLY BY 10.0 IN. CIRCUMFERENTIALLY.		of the
2)		FORM SCAN.		
3)	WAS	PROPER COLOR ASSIGNMENT AND DISPLAY CLAR	ITY A	CHIEVED?
	CIF	RCLE ONE: (YES) NO		

IF YES, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, RETURN TO THE MASTER FORM AND CHECK THE NUMBERS ENTERED INTO THE COLOR PALETTE FORM.

- 4) RE-PERFORM SCAN.
- 5) WAS PROPER COLOR ASSIGNMENT AND DISPLAY CLARITY ACHIEVED?

CIRCLE ONE: YES NO

IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE ACTION(S)	

SECTION 2:

- 1) RECALL THE SCREEN PRESENTATION FROM SECTION 1 OF THIS FORM AND MAKE A HARD COPY OF IT ON THE HEWLETT/PACKARD PAINTJET PRINTER.
- 2) COMPARE THE HARD COPY TO THE SCREEN PRESENTATION TO VERIFY THAT THE SAME COLOR LEGEND APPEARS AND THE ALL THE CHARACTERS ARE SHARPLY DEFINED AND EASY TO READ.

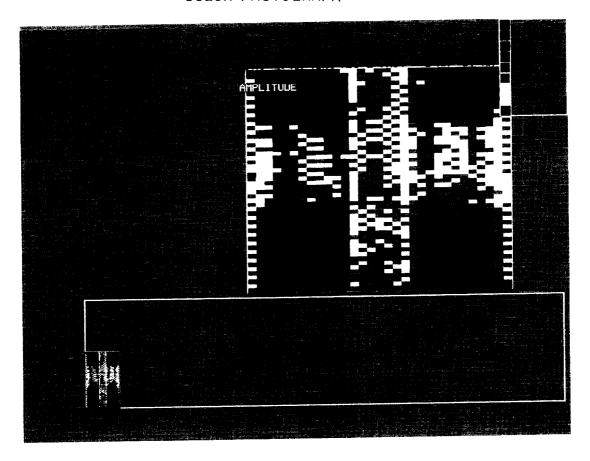
IF THE HARD COPY PRESENTATION MATCHES THE SCREEN PRESENTATION, ATTACH THE HARD COPY TO THIS FORM AND PROCEED TO DATA FILE INTEGRITY VERIFICATION TEST.

IF THE TWO PRESENTATIONS DON'T MATCH IN EITHER COLOR OR CLARITY, CHECK ALL CONNECTIONS, VERIFY THAT THE PRINTER IS CONFIGURED PROPERLY.

3) RE-PERFORM TEST.

4)	DID THE TWO PRESENTATIONS MATCH?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, ATTACH THE HARD COPY TO THIS FORM, AND PROCEED TO THE DATA FILE INTEGRITY VERIFICATION TEST.
	IF NO, COMPLETE A PROBLEM FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN, ATTACH THE HARD COPY TO THIS FORM AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)

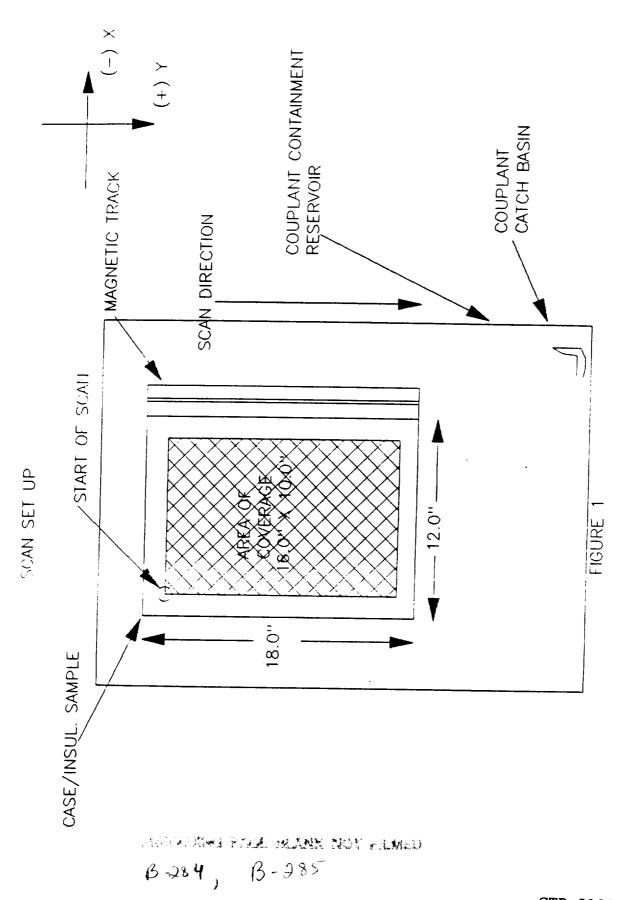
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CTP-0100 Page 83

CRT DISPLAY AND HARD COPY VERIFICATION TESTS

DATE: 5 09	SYSTEM SERIAL	NUMBER:
OPERATOR: (1)	PRINTER SERIA	L NUMBER:
VERIFIED BY:	TRANSDUCER SE	RIAL NUMBER
SOFTWARE VERSION NUMBER:		
SECTION 1:		,
1) COMPLETE FOLLOWING CHECK LIST BEFORE	E PERFORMING T	EST.
a) 5.0 MHz TRANSDUCER IS BEING USEI)	completed (initials) _BSC
, and complete ADM IC DE		BSL_
, and the second		BSC
THE STATE MODEL		BSC
d) SYSTEM IS IN RF MODE	vna	BSC
e) A-SCAN GATE DELAY 9.0 MICROSECON 20.0		<u>BSL</u>
f) A-SCAN GATE WIDTH 51.0 MICROSECO		BSC
g) C-SCAN GATE DELAY IS 20.0 MICRO		BSC
h) C-SCAN GATE WIDTH IS 30.0 MICRO	SECONDS	_65[_
i) COLOR PALETTE IN THE MASTER FOR BEEN SET UP IN ACCORDANCE WITH ENGINEERING SPECIFICATION NUMBE PAGE 73, "COLOR PALETTE"	AMDATA	BSC
j) SCAN WILL COVER AN AREA THAT IS AXIALLY BY 10.0 IN. CIRCUMFEREN S.O	8.0 16.0 IN. TIALLY	BSC
2) PERFORM SCAN.		
3) WAS PROPER COLOR ASSIGNMENT AND DIS	SPLAY CLARITY	ACHIEVED?
CIRCLE ONE: YES NO		

IF YES, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, RETURN TO THE MASTER FORM AND CHECK THE NUMBERS ENTERED INTO THE COLOR PALETTE FORM.

- 4) RE-PERFORM SCAN.
- 5) WAS PROPER COLOR ASSIGNMENT AND DISPLAY CLARITY ACHIEVED?

CIRCLE ONE: YES NO

IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE ACTION(S)	

SECTION 2:

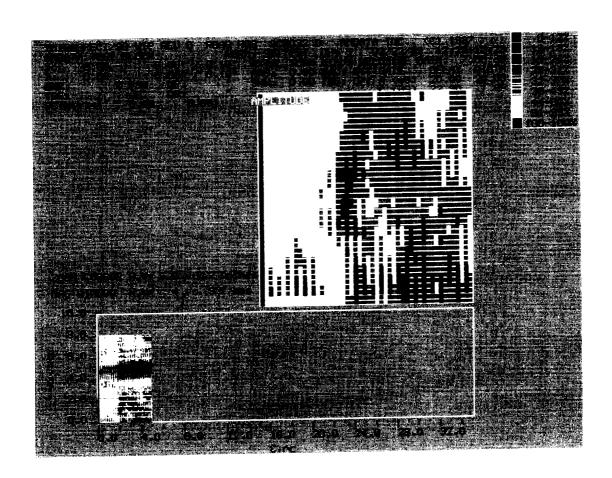
- 1) RECALL THE SCREEN PRESENTATION FROM SECTION 1 OF THIS FORM AND MAKE A HARD COPY OF IT ON THE HEWLETT/PACKARD PAINTJET PRINTER.
- 2) COMPARE THE HARD COPY TO THE SCREEN PRESENTATION TO VERIFY THAT THE SAME COLOR LEGEND APPEARS AND THE ALL THE CHARACTERS ARE SHARPLY DEFINED AND EASY TO READ.

IF THE HARD COPY PRESENTATION MATCHES THE SCREEN PRESENTATION, ATTACH THE HARD COPY TO THIS FORM AND PROCEED TO DATA FILE INTEGRITY VERIFICATION TEST.

IF THE TWO PRESENTATIONS DON'T MATCH IN EITHER COLOR OR CLARITY, CHECK ALL CONNECTIONS, VERIFY THAT THE PRINTER IS CONFIGURED PROPERLY.

3) RE-PERFORM TEST.

ł)	DID THE TWO PRESENTATIONS MATCH?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, ATTACH THE HARD COPY TO THIS FORM, AND PROCEED TO THE DATA FILE INTEGRITY VERIFICATION TEST.
	IF NO, COMPLETE A PROBLEM FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN, ATTACH THE HARD COPY TO THIS FORM AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)

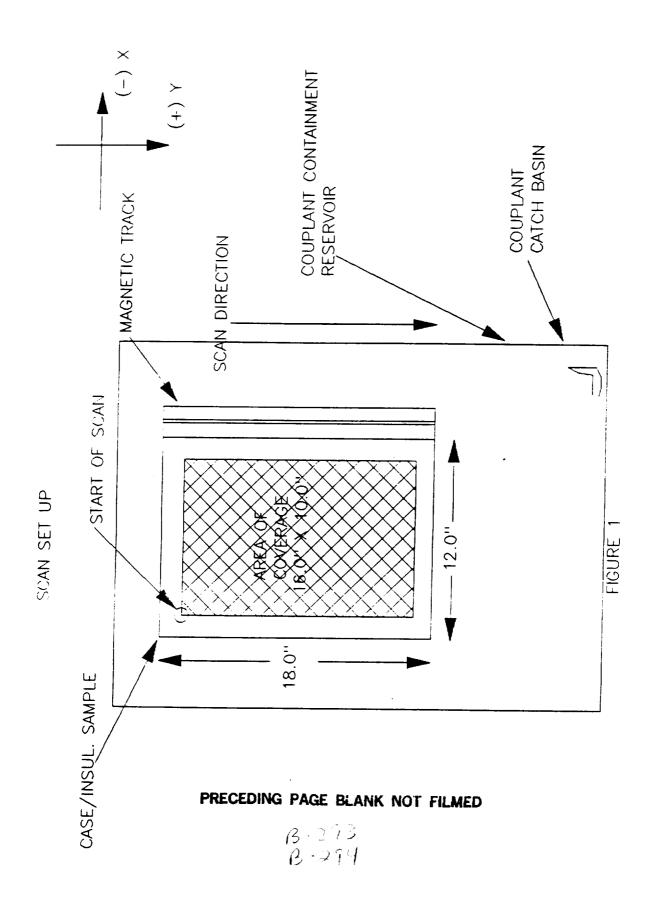


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CRT DISPLAY AND HARD COPY VERIFICATION TESTS

VER	RATOR	R: Sind Sing DBY: VERSION NUMBER:	SAS PRINTER SASI	i <u>StS</u> SERIA SCC CER SE	NUMBER: L NUMBER: RIAL NUMBER
SEC	rion	1:			
1)	COM	PLETE FOLLOWING CHECK LIST BEFOR	E PERFOR	MING T	TEST.
					COMPLETED (INITIALS)
	a)	5.0 MHz TRANSDUCER IS BEING USE	D		35C
	b)	10.0 IN. LONG SCANNER ARM IS BE	ING USED		BSC
	c)	SAMPLING INCREMENT IS 0.10 IN.			BSC
	d)	SYSTEM IS IN RF MODE			<u>850</u>
	e)	A-SCAN GATE DELAY 9.0 MICROSECO	NDS		BSC_
	f)	A-SCAN GATE WIDTH 51.0 MICROSEC	ONDS		<u> </u>
	g)	C-SCAN GATE DELAY IS 20.0 MICRO	SECONDS		BSC_
	h)	C-SCAN GATE WIDTH IS 30.0 MICRO	SECONDS		BSC
	i)	COLOR PALETTE IN THE MASTER FOR BEEN SET UP IN ACCORDANCE WITH ENGINEERING SPECIFICATION NUMBER PAGE 73, "COLOR PALETTE"	AMDATA	3,	BSC
	j)	SCAN WILL COVER AN AREA THAT IS AXIALLY BY 10.0 IN. CIRCUMFEREN	; 16.0 II	N. 	39C
2)		FORM SCAN.			
3)	WAS	PROPER COLOR ASSIGNMENT AND DIS	SPLAY CL	ARITY	ACHIEVED?
	CIF	RCLE ONE: YES NO			

IF YES, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, RETURN TO THE MASTER FORM AND CHECK THE NUMBERS ENTERED INTO THE COLOR PALETTE FORM.

- 4) RE-PERFORM SCAN.
- 5) WAS PROPER COLOR ASSIGNMENT AND DISPLAY CLARITY ACHIEVED?

CIRCLE ONE: YES NO

IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE ACTION(S)	

SECTION 2:

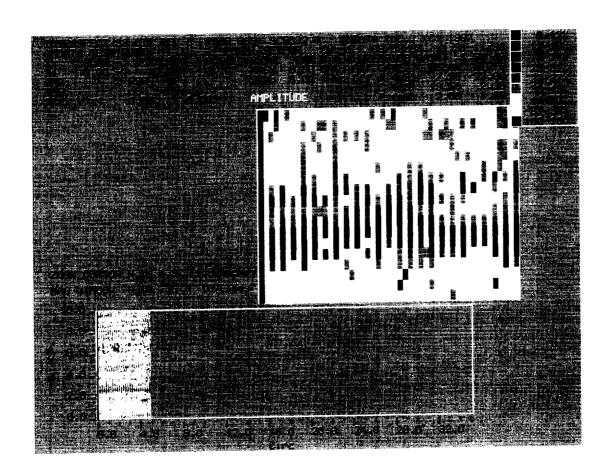
- 1) RECALL THE SCREEN PRESENTATION FROM SECTION 1 OF THIS FORM AND MAKE A HARD COPY OF IT ON THE HEWLETT/PACKARD PAINTJET PRINTER.
- 2) COMPARE THE HARD COPY TO THE SCREEN PRESENTATION TO VERIFY THAT THE SAME COLOR LEGEND APPEARS AND THE ALL THE CHARACTERS ARE SHARPLY DEFINED AND EASY TO READ.

IF THE HARD COPY PRESENTATION MATCHES THE SCREEN PRESENTATION, ATTACH THE HARD COPY TO THIS FORM AND PROCEED TO DATA FILE INTEGRITY VERIFICATION TEST.

IF THE TWO PRESENTATIONS DON'T MATCH IN EITHER COLOR OR CLARITY, CHECK ALL CONNECTIONS, VERIFY THAT THE PRINTER IS CONFIGURED PROPERLY.

3) RE-PERFORM TEST.

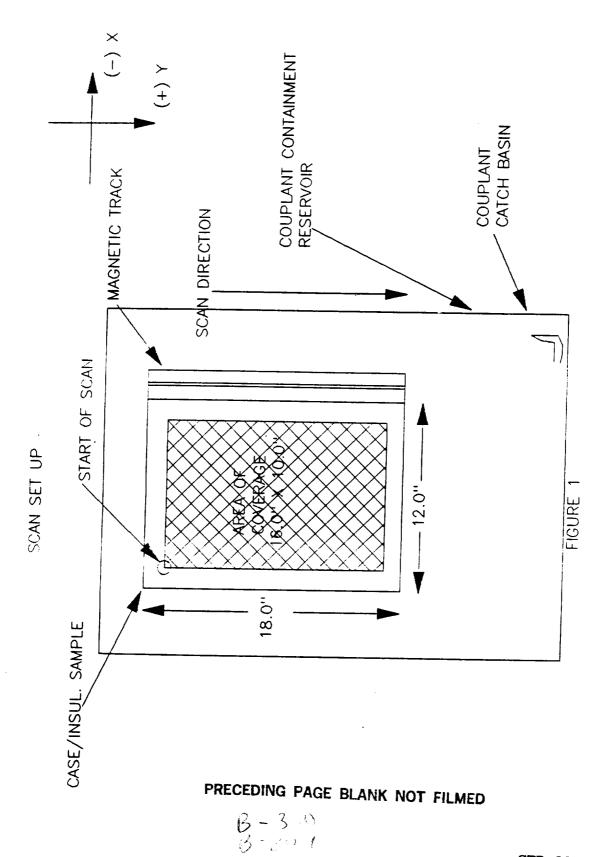
4)	DID THE TWO PRESENTATIONS MATCH?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, ATTACH THE HARD COPY TO THIS FORM, AND PROCEED TO THE DATA FILE INTEGRITY VERIFICATION TEST.
	IF NO, COMPLETE A PROBLEM FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN, ATTACH THE HARD COPY TO THIS FORM AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)



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CRT DISPLAY AND HARD COPY VERIFICATION TESTS

DATE:	<u> </u>	3 May 89 B. Cochina	SYSTEM SERIAL SAS1869 PRINTER SERIAL SAS1869	L NUMBER:
VERIE SOFTW		BY: VERSION NUMBER:	TRANSDUCER SEI	RIAL NUMBER
SECT				
1) (COMP	LETE FOLLOWING CHECK LIST BEFORE	E PERFORMING T	EST.
		5.0 MHz TRANSDUCER IS BEING USE)	COMPLETED (INITIALS)
	a)			BSC
1	b)	10.0 IN. LONG SCANNER ARM IS BE	ING ODED	BSC
(c)	SAMPLING INCREMENT IS 0.10 IN.		730
(d)	SYSTEM IS IN RF MODE	• • • • • • • • • • • • • • • • • • • •	7.CA
•	e)	A-SCAN GATE DELAY 9.0 MICROSECO	NDS	DOL
	f)	A-SCAN GATE WIDTH 51.0 MICROSEC	ONDS	BSC
,	g)	C-SCAN GATE DELAY IS 20.0 MICRO	SECONDS	BSC
	h)	C-SCAN GATE WIDTH IS 30.0 MICRO	SECONDS	BSC
	i)	COLOR PALETTE IN THE MASTER FOR BEEN SET UP IN ACCORDANCE WITH ENGINEERING SPECIFICATION NUMBE PAGE 73, "COLOR PALETTE"	AMDATA	35C
	j)	SCAN WILL COVER AN AREA THAT IS AXIALLY BY 10.0 IN. CIRCUMFEREN	16.0 IN. TIALLY	BSC
2)	PER	FORM SCAN.		
3)	WAS	PROPER COLOR ASSIGNMENT AND DIS	PLAY CLARITY	ACHIEVED?
	CIR	CLE ONE: YES NO		

IF YES, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, RETURN TO THE MASTER FORM AND CHECK THE NUMBERS ENTERED INTO THE COLOR PALETTE FORM.

- 4) RE-PERFORM SCAN.
- 5) WAS PROPER COLOR ASSIGNMENT AND DISPLAY CLARITY ACHIEVED?

CIRCLE ONE: YES NO

IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE ACTION(S)	

SECTION 2:

- 1) RECALL THE SCREEN PRESENTATION FROM SECTION 1 OF THIS FORM AND MAKE A HARD COPY OF IT ON THE HEWLETT/PACKARD PAINTJET PRINTER.
- 2) COMPARE THE HARD COPY TO THE SCREEN PRESENTATION TO VERIFY THAT THE SAME COLOR LEGEND APPEARS AND THE ALL THE CHARACTERS ARE SHARPLY DEFINED AND EASY TO READ.

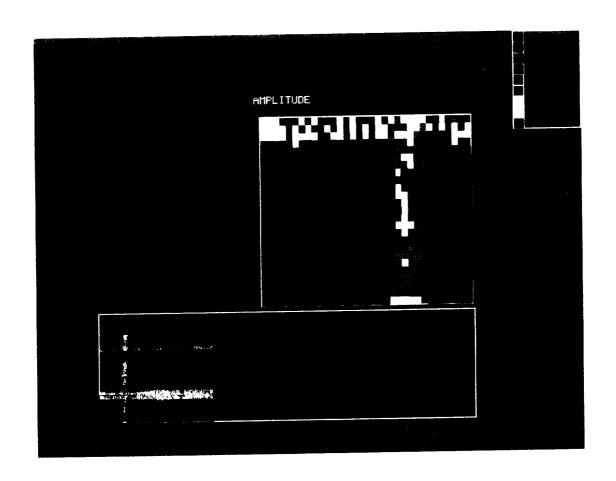
IF THE HARD COPY PRESENTATION MATCHES THE SCREEN PRESENTATION, ATTACH THE HARD COPY TO THIS FORM AND PROCEED TO DATA FILE INTEGRITY VERIFICATION TEST.

IF THE TWO PRESENTATIONS DON'T MATCH IN EITHER COLOR OR CLARITY, CHECK ALL CONNECTIONS, VERIFY THAT THE PRINTER IS CONFIGURED PROPERLY.

3) RE-PERFORM TEST.

4)	DID THE TWO PRESENTATIONS MATCH?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, ATTACH THE HARD COPY TO THIS FORM, AND PROCEED TO THE DATA FILE INTEGRITY VERIFICATION TEST.
	IF NO, COMPLETE A PROBLEM FAILURE REPORT, FORM N, OF THIS QUALIFICATION PLAN, ATTACH THE HARD COPY TO THIS FORM AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)

	4	a ^{trad}			

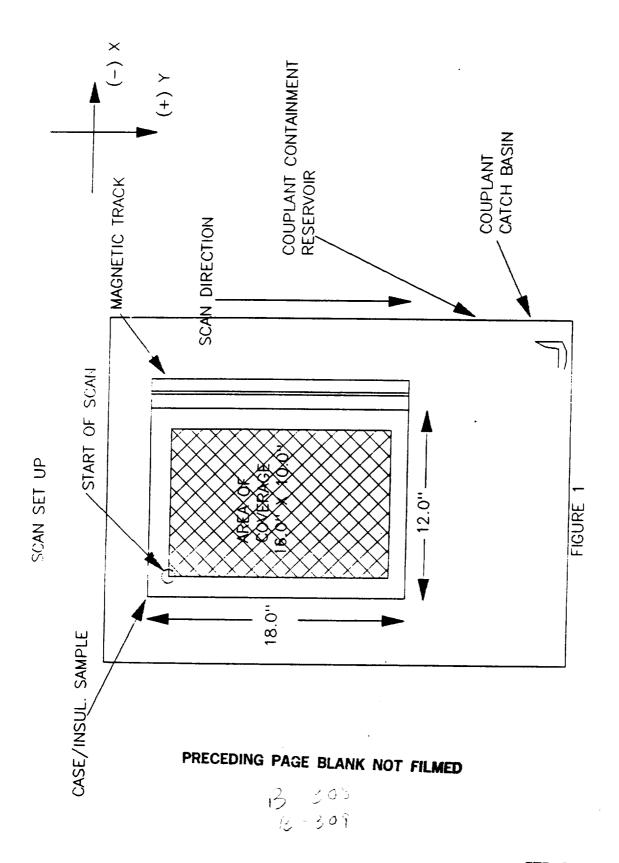


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DATA FILE INTEGRITY YERIFICATION TEST

DATE:	16/453/69	SYSTEM SERIAL NUMBER:
OPERATOR:		TRANSDUCER SERIAL NUMBER:
VERIFUED BY:	(Carried Control of Co	DATA TAPE SERIAL NUMBER:
SOFTWARE VERS	SION NUMBER:	
SECTION 1		
	THE FOLLOWING CHECK LIST	BEFORE PERFORMING TEST.
1, 00		COMPLETED (INITIALS)
a) 5.0 MH2	Z TRANSDUCER IS BEING USI	\mathcal{L}
b) 10.0 II	N. LONG SCANNER ARM IS B	EING USED
c) SAMPLIN	NG INCREMENT IS 0.10 IN.	
d) SYSTEM	IS IN RF MODE	
e) A-SCAN	GATE DELAY 9.0 MICROSEC	onds
f) A-SCAN	GATE WIDTH 51.0 MICROSE	CONDS
g) C-SCAN	GATE DELAY 20.0 MICROSE	CONDS J. K
h) C-SCAN	GATE WIDTH 30.0 MICROSE	CONDS
i) SCAN W AXIALL	ILL COVER AN AREA THAT I Y BY 10.0 IN. CIRCUMFERE	S 16.0 IN. NTIALLY
j) A NEW	DATA TAPE HAS BEEN ACQUI	RED
k) PRINTE	R IS CONFIGURED PROPERLY	$\frac{J \cdot K}{J}$
1) NAME D	ATA FILE SETDIVT	
2) PERFORM	SCAN.	
3) SAVE DAT	TA TO HARD DISK.	
		CTP-0100 Page 84

PAGE 2 FORM M

4)	HAS ALL DATA BEEN STORED PROPERLY TO HARD DISK?
	CIRCLE ONE: YES NO
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, CHECK ALL CONNECTIONS, AND INFORMATION ON SET FORM, PROCEED TO STEP 4.
5)	RE-PERFORM SCAN.
6)	WAS RE-SCAN DATA PROPERLY SAVED AND RETRIEVABLE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND PROCEED TO STEP 6 OF THIS FORM.
	IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)
7)	
7) 8)	
·	OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN. WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128 SECTION 10
·	OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN. WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O.
·	OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN. WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O. CIRCLE ONE: YES NO IF YES, DO NOT DISCARD HARD COPY INFORMATION. PROGRESS TO

10) WAS ALL REQUIRED DATA PRESENT.

CIRCLE ONE: YES NO

IF YES, NOTE IN SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. DO NOT DISCARD THE HARD COPIES, PROCEED TO SECTION 2.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

SECTION 2

- 1) TRANSFER THE DATA FILES STORED ON THE HARD DISK TO TAPE.
- 2) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF THE TRANSFER WAS SUCCESSFUL, PROCEED TO STEP 5 OF THIS FORM.

IF THE TRANSFER WAS UNSUCCESSFUL, VERIFY THAT THE PROPER SEQUENCE OF STEPS WAS PERFORMED TO TRANSFER DATA FROM ONE MEDIA TO ANOTHER. CHECK CASSETTE TO VERIFY THAT THE "SAFE" SWITCH IS IN THE OFF POSITION, AND PROCEED TO STEP 3 OF THIS FORM.

- 3) PERFORM "DATA FILE TRANSFER" SEQUENCE AGAIN.
- 4) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF TRANSFER WAS SUCCESSFUL, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO STEP 5 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE AC	CTION(S)	

PAGE 4 FORM M

5)	TRANSFER DATA FILES FROM TAPE BACK TO HARD DISK AND VERIFY DATA FILES WERE SUCCESSFUL TRANSFERRED.
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, PROCEED WITH STEPS 3 AND 4 OF THIS SECTION AGAIN, THIS TIME CONCERNING DATA FILE TRANSFER FROM TAPE TO DISK.
	CORRECTIVE ACTION(S)
6)	PERFORM STEPS 6 THROUGH 9 OF SECTION 1 OF THIS FORM. MAKE COMMENTS CONCERNING DEVIATIONS DURING EXECUTION OF THE ABOVE SET OF INSTRUCTIONS IN THE SPACE BELOW.
	COMMENTS
7)	COMPARE THE HARD COPIES OBTAINED FROM SECTION 1 OF THIS FORM AGAINST THE HARD COPIES OBTAINED FROM SECTION 2 OF THIS FORM.
8)	WERE THE AMPLITUDE RESPONSES ON THE A AND C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN AMPLITUDE RESPONSE

PAGE 5 FORM M

9)	WERE THE PHASE RESPONSES ON THE A-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN PHASE RESPONSE
l O)	WERE THE FREQUENCY RESPONSES ON THE B, C, SPECTRAL C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IS SPACE BELOW.
	DIFFERENCES IN FREQUENCY RESPONSE
11)	WERE THE COLOR SCALES AND DISPLAY CLARITY SAME?
,	CIRCLE ONE: YES NO
	The state of the s
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN COLOR SCALE AND DISPLAY CLARITY
	CODIEC OPENINED FROM SECTION 1 DO NOT
	***NOTE: IF THE HARD COPIES OBTAINED FROM SECTION 1 DO NOT MATCH THE HARD COPIES FROM SECTION 2, THERE WAS A COMPROMISE
	IN DATA FILE INTEGRITY DURING TRANSFER. ASSEMBLE ALL HARD

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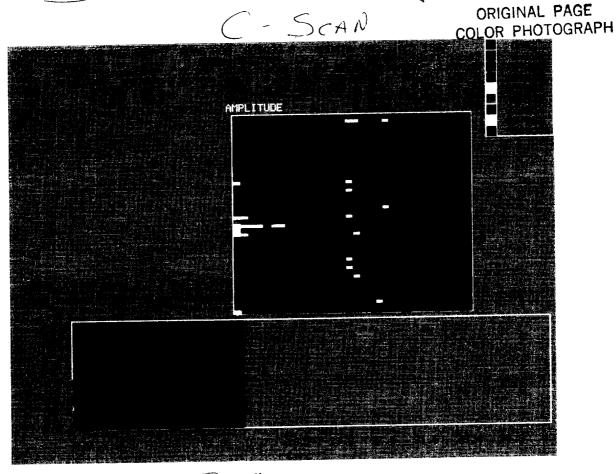
REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

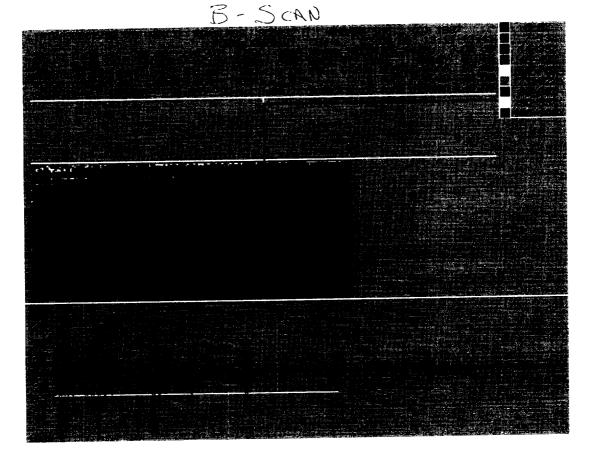
COPIES TOGETHER, ATTACH TO THIS FORM, COMPLETE A PROBLEM/FAILURE



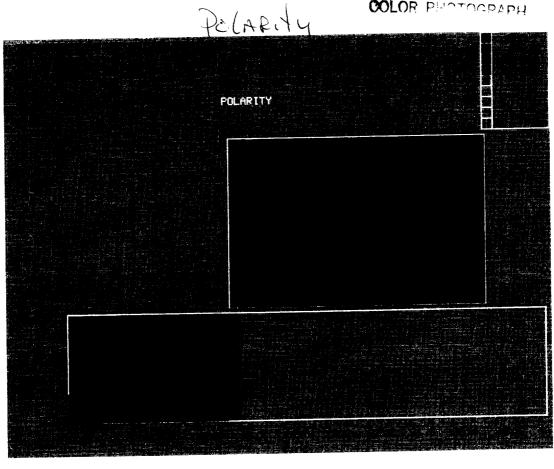
DALA FILE INTEGRITY TEST MARKET

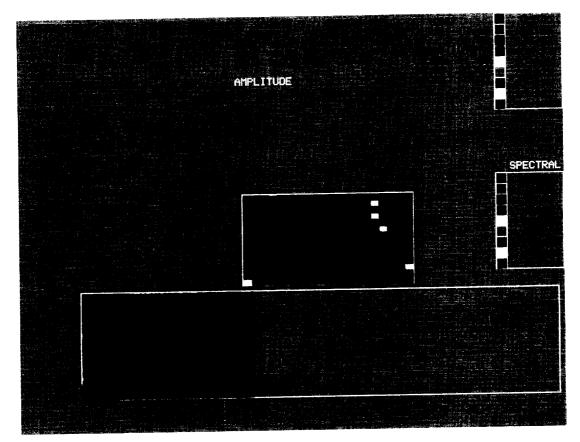
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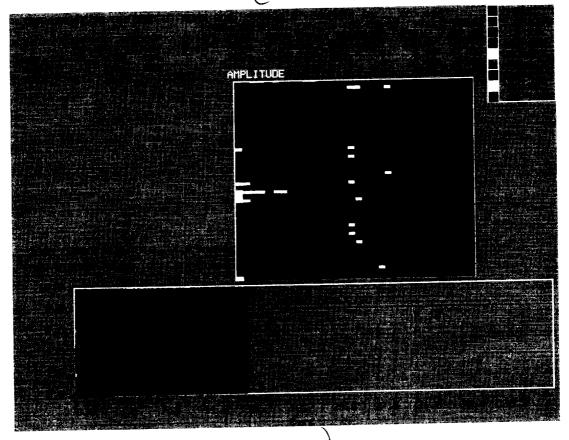


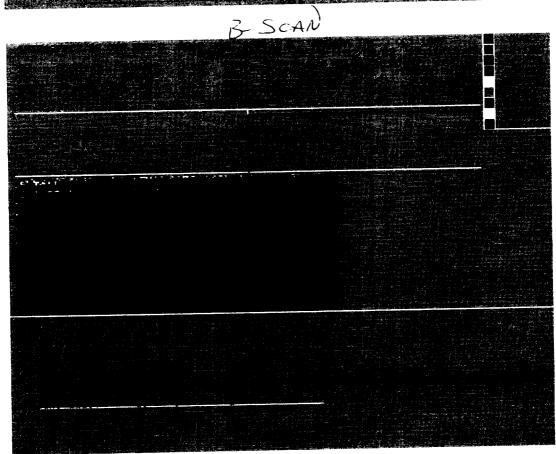


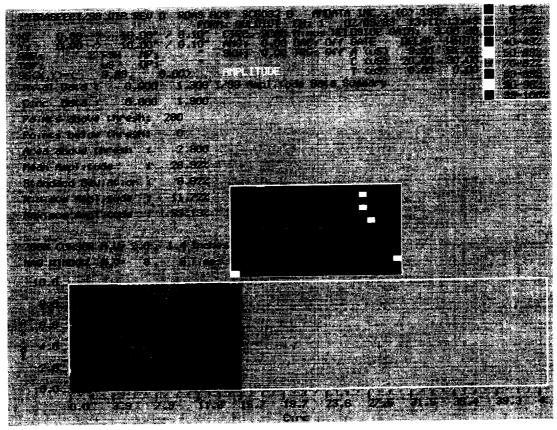
JAPE DATA OF FILE INTEGRITY FEST

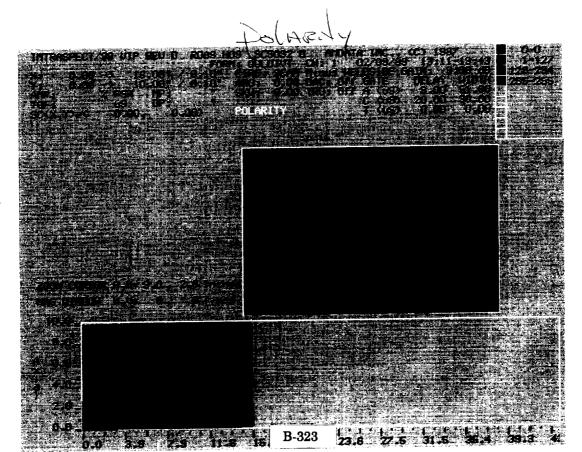
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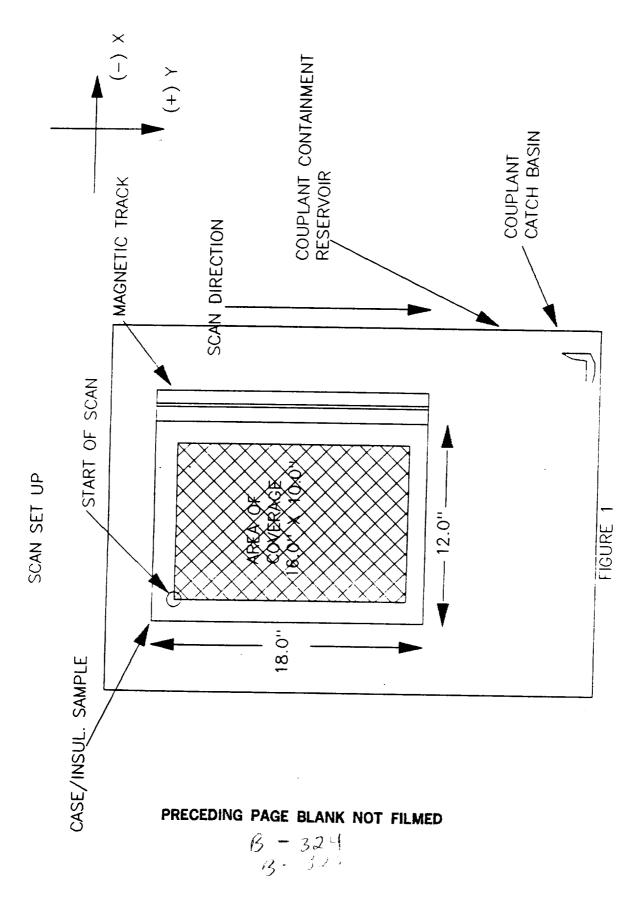






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DATA FILE INTEGRITY VERIFICATION TEST

DATE:	SYSTEM SERIAL NUMBER:
OPERATOR: 101	TRANSDUCER SERIAL NUMBER:
Brad Lushing	
VERIFIED BY:	T&2229
SOFTWARE VERSION NUMBER:	·
SECTION 1	
1) COMPLETE THE FOLLOWING	G CHECK LIST BEFORE PERFORMING TEST.
	COMPLETED (INITIALS)
a) 5.0 MHZ TRANSDUCER	is being used BSC
b) 10.0 IN. LONG SCANN	ER ARM IS BEING USED BSC
c) SAMPLING INCREMENT	IS 0.10 IN BSC
d) SYSTEM IS IN RF MOD	E <u>BSL</u>
ac e) A-SCAN GATE DELAY 9	MICROSECONDS BSC
f) A-SCAN GATE WIDTH 5	
g) C-SCAN GATE DELAY 2	2.9 0.0 MICROSECONDS BSC .65
h) C-SCAN GATE WIDTH 9	MICROSECONDS BSC 8.0
i) SCAN WILL COVER AN AXIALLY BY 10.0 IN. 5.0	AREA THAT IS 16.0 IN. CIRCUMFERENTIALLY BSC
j) A NEW DATA TAPE HAS	
k) PRINTER IS CONFIGUR	ED PROPERLY BSC
1) NAME DATA FILE SETD	jvt <u>β5C</u>
2) PERFORM SCAN.	
3) SAVE DATA TO HARD DIS	SK.
•	CTP-0100 Page 84

4)	HAS ALL DATA BEEN STORED PROPERLY TO HARD DISK?
	CIRCLE ONE: YES NO
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, CHECK ALL CONNECTIONS, AND INFORMATION ON SET FORM, PROCEED TO STEP 4.
5)	RE-PERFORM SCAN.
6)	WAS RE-SCAN DATA PROPERLY SAVED AND RETRIEVABLE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND PROCEED TO STEP 6 OF THIS FORM.
	IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S) N/A
7)	OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN
8)	WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O.
8)	ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10. AND
8)	APPENDIX O.
8)	ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O. CIRCLE ONE: YES NO IF YES, DO NOT DISCARD HARD COPY INFORMATION. PROCEED TO

10) WAS ALL REQUIRED DATA PRESE	10)	WAS	ALL	REQUIRED	DATA	PRESENT
---------------------------------	-----	-----	-----	----------	------	---------

CIRCLE ONE:



IF YES, NOTE IN SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. DO NOT DISCARD THE HARD COPIES, PROCEED TO SECTION 2.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

SECTION 2

- 1) TRANSFER THE DATA FILES STORED ON THE HARD DISK TO TAPE.
- 2) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF THE TRANSFER WAS SUCCESSFUL, PROCEED TO STEP 5 OF THIS FORM.

IF THE TRANSFER WAS UNSUCCESSFUL, VERIFY THAT THE PROPER SEQUENCE OF STEPS WAS PERFORMED TO TRANSFER DATA FROM ONE MEDIA TO ANOTHER. CHECK CASSETTE TO VERIFY THAT THE "SAFE" SWITCH IS IN THE OFF POSITION, AND PROCEED TO STEP 3 OF THIS FORM.

- 3) PERFORM "DATA FILE TRANSFER" SEQUENCE AGAIN.
- 4) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF TRANSFER WAS SUCCESSFUL, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO STEP 5 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE	ACTION(S)		

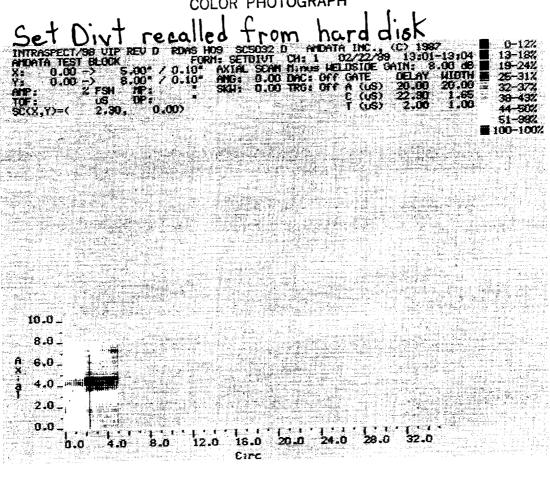
PAGE 4 FORM M

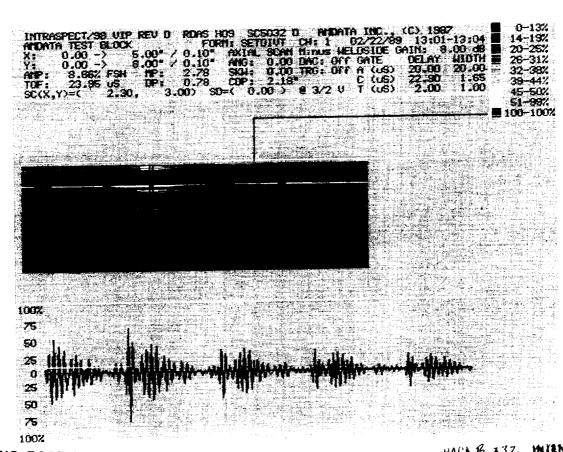
5)	TRANSFER DATA FILES FROM TAPE BACK TO HARD DISK AND VERIFY DATA FILES WERE SUCCESSFUL TRANSFERRED.
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, PROCEED WITH STEPS 3 AND 4 OF THIS SECTION AGAIN, THIS TIME CONCERNING DATA FILE TRANSFER FROM TAPE TO DISK.
	CORRECTIVE ACTION(S)
6)	PERFORM STEPS 6 THROUGH 9 OF SECTION 1 OF THIS FORM. MAKE COMMENTS CONCERNING DEVIATIONS DURING EXECUTION OF THE ABOVE SET OF INSTRUCTIONS IN THE SPACE BELOW.
	COMMENTS
7)	COMPARE THE HARD COPIES OBTAINED FROM SECTION 1 OF THIS FORM AGAINST THE HARD COPIES OBTAINED FROM SECTION 2 OF THIS FORM
8)	WERE THE AMPLITUDE RESPONSES ON THE A AND C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN AMPLITUDE RESPONSE

PAGE 5 FORM M

WERE THE PHASE RESPONSES ON THE A-SCANS THE SAME?
CIRCLE ONE: YES NO
IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
DIFFERENCES IN PHASE RESPONSE
WERE THE FREQUENCY RESPONSES ON THE B, C, SPECTRAL C-SCANS THE SAME?
CIRCLE ONE: YES NO
IF NO, MAKE COMMENTS NOTING DIFFERENCES IS SPACE BELOW.
DIFFERENCES IN FREQUENCY RESPONSE
WERE THE COLOR SCALES AND DISPLAY CLARITY SAME?
CIRCLE ONE: YES NO
IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
DIFFERENCES IN COLOR SCALE AND DISPLAY CLARITY

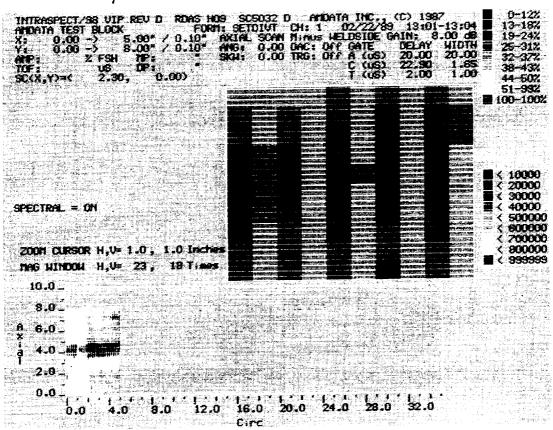
***NOTE: IF THE HARD COPIES OBTAINED FROM SECTION 1 DO NOT MATCH THE HARD COPIES FROM SECTION 2, THERE WAS A COMPROMISE IN DATA FILE INTEGRITY DURING TRANSFER. ASSEMBLE ALL HARD COPIES TOGETHER, ATTACH TO THIS FORM, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.



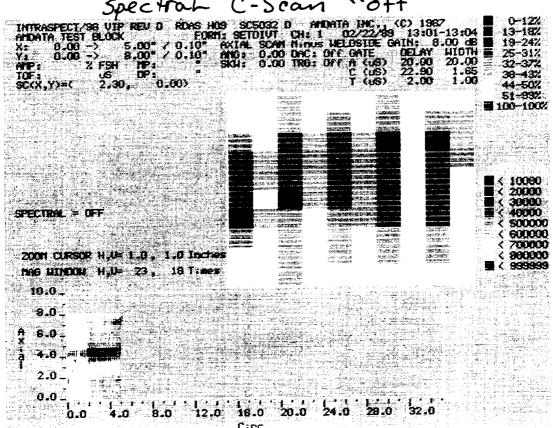


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Spectral C-Scan "on

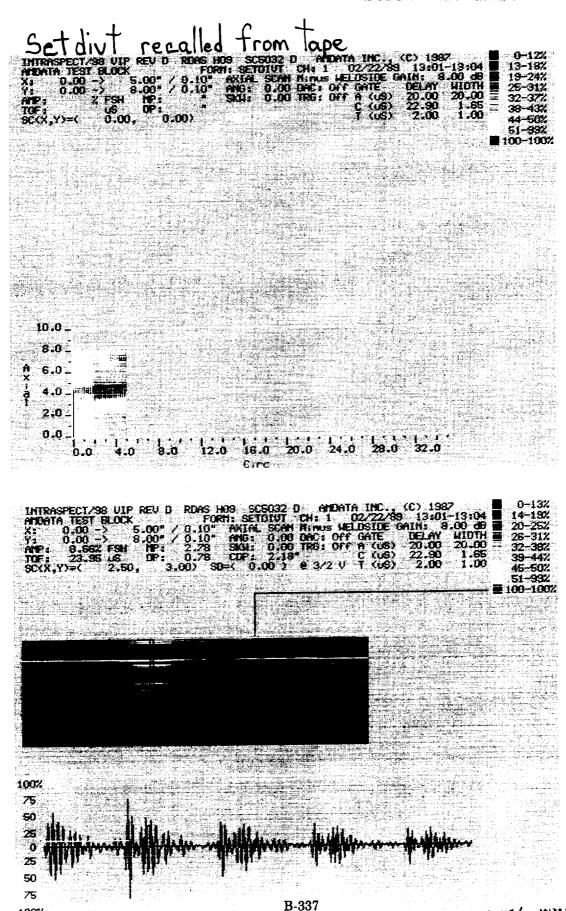


spectral C-Scan "off"

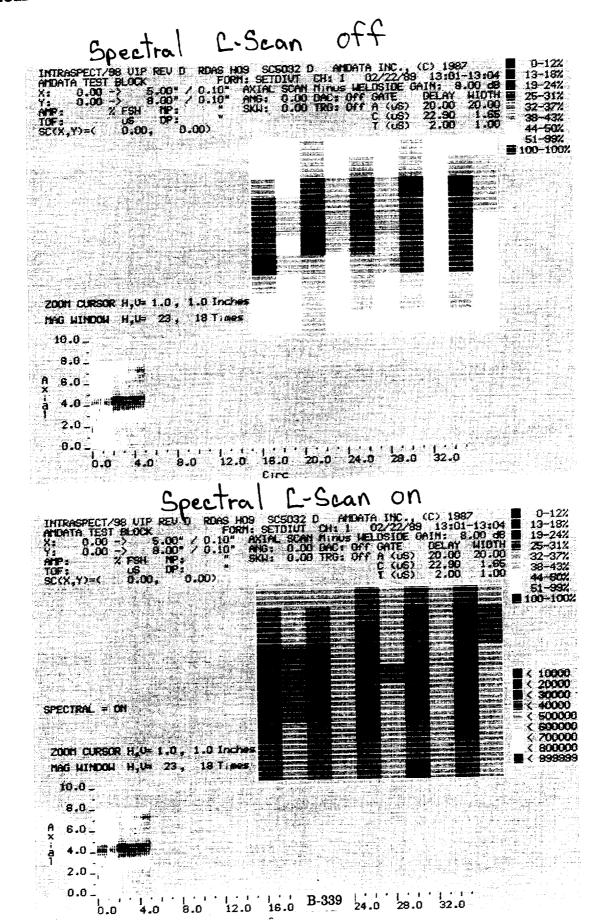


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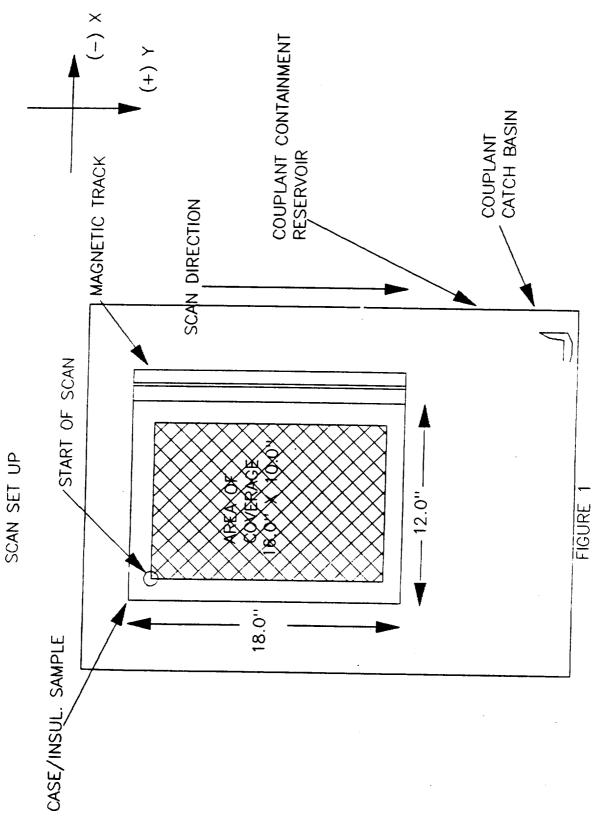


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B-340 B-341

DATA FILE INTEGRITY VERIFICATION TEST

DATE: Cl. March 801	SYSTEM SERIAL NUMBER: SA 51865
OPERATOR: VERIFIED BY:	TRANSDUCER SERIAL NUMBER: RD 3 DATA TAPE SERIAL NUMBER: TO3079
SOFTWARE VERSION NUMBER:	
SECTION 1	CK LIST BEFORE PERFORMING TEST.
1) COMPLETE THE FOLLOWING CHE	COMPLETED (INITIALS)
a) 5.0 MHZ TRANSDUCER IS BE	
b) 10.0 IN. LONG SCANNER AF	M IS BEING USED <u>BSC</u>
c) SAMPLING INCREMENT IS 0.	10 IN BSC
a) System is in at a	$\frac{BSC}{BSC}$
e) A-SCAN GATE DELAY 9.0 MI 23.5 f) A-SCAN GATE WIDTH 51.0 M	7 ar
يري () C-SCAN GATE DELAY 20.0 ا	$\mathcal{L}^{\mathcal{C}}$
h) C-SCAN GATE WIDTH 30.0	MICROSECONDS DSC
i) SCAN WILL COVER AN AREA AXIALLY BY $\frac{10.0}{5}$ IN. CIRC	THAT IS 16.0 IN. CUMFERENTIALLY BC
j) A NEW DATA TAPE HAS BEE	N ACQUIRED
k) PRINTER IS CONFIGURED P	
1) NAME DATA FILE SETDIVT	
2) PERFORM SCAN.	
3) SAVE DATA TO HARD DISK.	
	CTP-010 Page 84

PAGE	2
FORM	М

	· · · · · ·
4)	HAS ALL DATA BEEN STORED PROPERLY TO HARD DISK?
	CIRCLE ONE: YES NO
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, CHECK ALL CONNECTIONS, AND INFORMATION ON SET FORM, PROCEED TO STEP 4.
5)	RE-PERFORM SCAN.
6)	WAS RE-SCAN DATA PROPERLY SAVED AND RETRIEVABLE?
	CIRCLE ONE: YES NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND PROCEED TO STEP 6 OF THIS FORM.
	IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)
7)	OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN
	WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O.
	CIRCLE ONE: YES NO
	IF YES, DO NOT DISCARD HARD COPY INFORMATION, PROCEED TO SECTION 2 OF THIS FORM.
;	IF NO, CHECK CONNECTIONS TO PRINTER, VERIFY THAT THE SYSTEM AND PRINTER ARE CONFIGURED PROPERLY.

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9) OBTAIN C, B, SPECTRAL C-SCAN HARD COPIES.

PAGE 3 FORM M

10) WAS ALL REQUIRED DATA PRESENT.

CIRCLE ONE: YES NO

IF YES, NOTE IN SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. DO NOT DISCARD THE HARD COPIES, PROCEED TO SECTION 2.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

SECTION 2

- 1) TRANSFER THE DATA FILES STORED ON THE HARD DISK TO TAPE.
- 2) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF THE TRANSFER WAS SUCCESSFUL, PROCEED TO STEP 5 OF THIS FORM.

IF THE TRANSFER WAS UNSUCCESSFUL, VERIFY THAT THE PROPER SEQUENCE OF STEPS WAS PERFORMED TO TRANSFER DATA FROM ONE MEDIA TO ANOTHER. CHECK CASSETTE TO VERIFY THAT THE "SAFE" SWITCH IS IN THE OFF POSITION, AND PROCEED TO STEP 3 OF THIS FORM.

- 3) PERFORM "DATA FILE TRANSFER" SEQUENCE AGAIN.
- 4) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF TRANSFER WAS SUCCESSFUL, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO STEP 5 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE	ACTION(S)	

PAGE 4 FORM M

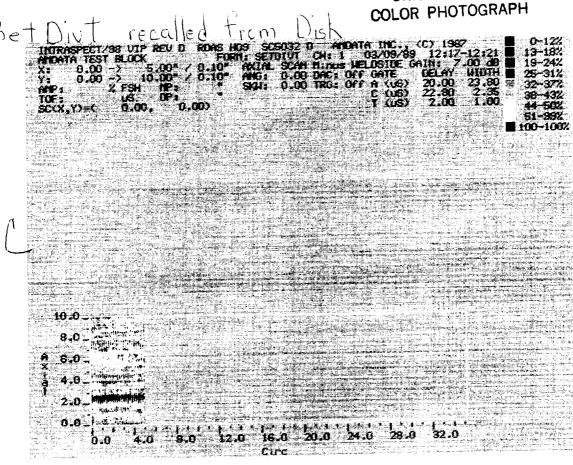
5)	TRANSFER DATA FILES FROM TAPE BACK TO HARD DISK AND VERIFY DATA FILES WERE SUCCESSFUL TRANSFERRED.
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, PROCEED WITH STEPS 3 AND 4 OF THIS SECTION AGAIN, THIS TIME CONCERNING DATA FILE TRANSFER FROM TAPE TO DISK.
	CORRECTIVE ACTION(S)
6)	PERFORM STEPS 6 THROUGH 9 OF SECTION 1 OF THIS FORM. MAKE COMMENTS CONCERNING DEVIATIONS DURING EXECUTION OF THE ABOVE SET OF INSTRUCTIONS IN THE SPACE BELOW.
	COMMENTS
7)	COMPARE THE HARD COPIES OBTAINED FROM SECTION 1 OF THIS FORM AGAINST THE HARD COPIES OBTAINED FROM SECTION 2 OF THIS FORM
8)	WERE THE AMPLITUDE RESPONSES ON THE A AND C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN AMPLITUDE RESPONSE

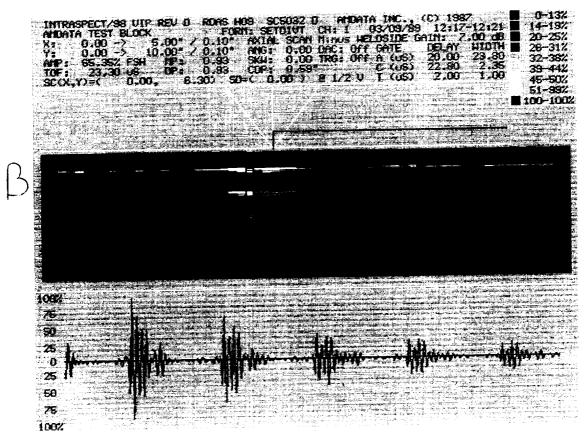
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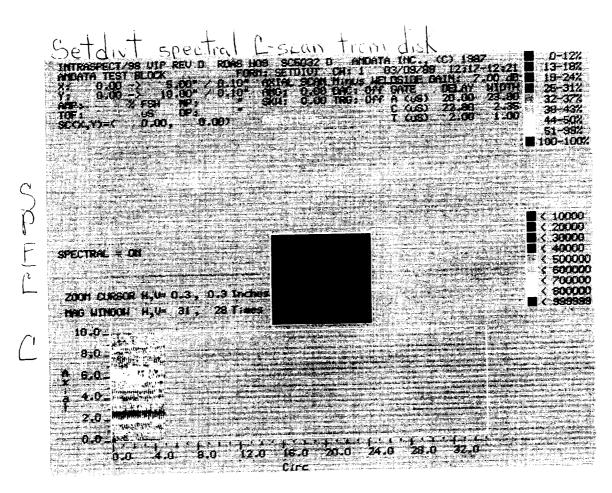
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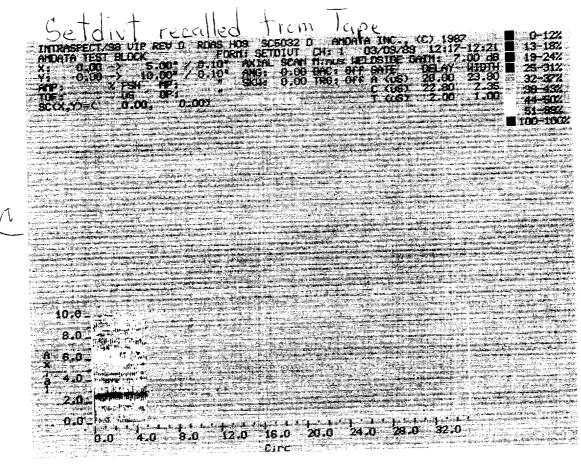


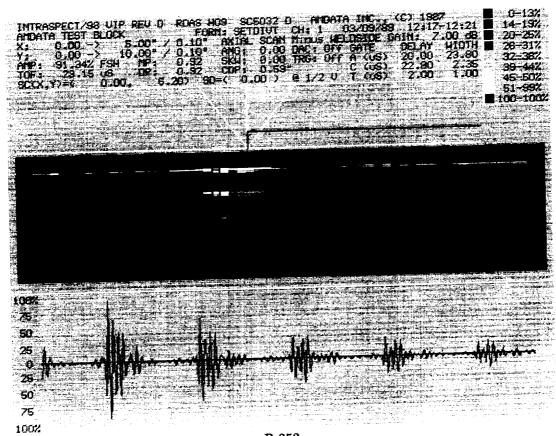




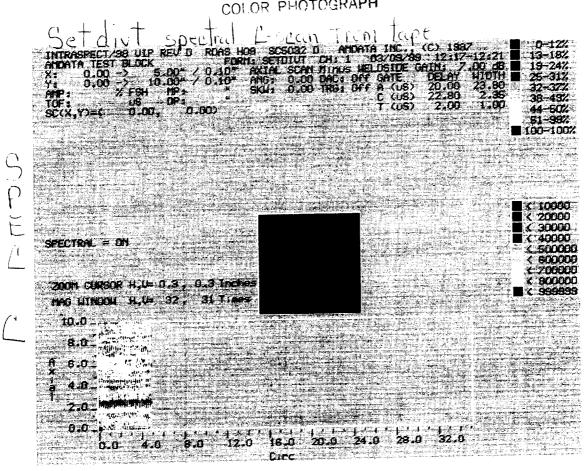
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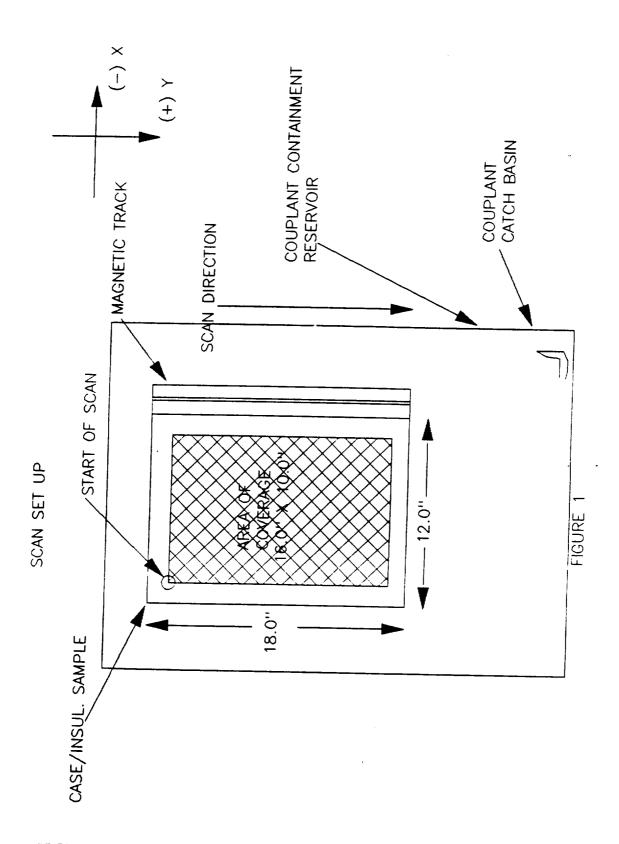


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B-356 B-357

B-358

PAGE 1 FORM M

DATA FILE INTEGRITY VERIFICATION TEST

DATE:	.23 May 89	SYSTEM SERIAL NUMBER: <u>SASISE!</u> TRANSDUCER SERIAL NUMBER:
OPERAT	OR: Brad Lushing	RND-3
VERIF1	ED BY:	DATA TAPE SERIAL NUMBER:
SOFTWA	ARE VERSION NUMBER:	
	4,0	
SECTIO		
1) C	OMPLETE THE FOLLOWING CHECK LIST E	BEFORE PERFORMING TEST.
	•	COMPLETED (INITIALS)
a)	5.0 MHZ TRANSDUCER IS BEING USED	<u>BCC</u>
b)	10.0 IN. LONG SCANNER ARM IS BEIL	NG USED BSC
c)	SAMPLING INCREMENT IS 0.10 IN.	<u>BSC</u>
d)		<u>Bsc</u>
e)	A-SCAN GATE DELAY 9.9 MICROSECON	ps <u>254</u>
f)	A-SCAN GATE WIDTH 51.0 MICROSECO	$\Im cc$
g)	C-SCAN GATE DELAY 20.0 MICROSECO	
h)	C-SCAN GATE WIDTH 30.0 MICROSECO	$\mathfrak{A}_{\mathcal{L}_{\mathcal{L}}}$
i)	SCAN WILL COVER AN AREA THAT IS AXIALLY BY 10.0 IN. CIRCUMFERENT	10.5 16.0 IN.
j)	A NEW DATA TAPE HAS BEEN ACQUIRE	D 35C
k)	PRINTER IS CONFIGURED PROPERLY	BSC
1)	NAME DATA FILE SET DIVT	BSC_
2) I	PERFORM SCAN.	
3) \$	SAVE DATA TO HARD DISK.	
,		CTP-0100 Page 84

	FORM M
4)	HAS ALL DATA BEEN STORED PROPERLY TO HARD DISK?
	CIRCLE ONE: YES NO
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, CHECK ALL CONNECTIONS, AND INFORMATION ON SET FORM, PROCEED TO STEP 4.
5)	RE-PERFORM SCAN.
6)	WAS RE-SCAN DATA PROPERLY SAVED AND RETRIEVABLE?
	CIRCLE ONE: NO
	IF YES, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, AND PROCEED TO STEP 6 OF THIS FORM.
	IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.
	CORRECTIVE ACTION(S)

- 7) OBTAIN A HARD COPY OF THE C-SCAN, B-SCAN, AND SPECTRAL C-SCAN.
- 8) WAS ALL REQUIRED DATA PRESENT ON EACH HARD COPY PER AMDATA ENGINEERING SPECIFICATION NUMBER 870128, SECTION 10, AND APPENDIX O.

CIRCLE ONE:



NO

IF YES, DO NOT DISCARD HARD COPY INFORMATION, PROCEED TO SECTION 2 OF THIS FORM.

IF NO, CHECK CONNECTIONS TO PRINTER, VERIFY THAT THE SYSTEM AND PRINTER ARE CONFIGURED PROPERLY.

9) OBTAIN C, B, SPECTRAL C-SCAN HARD COPIES.

10) WAS ALL REQUIRED DATA PRESENT.

CIRCLE ONE: YES NO

IF YES, NOTE IN SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM. DO NOT DISCARD THE HARD COPIES, PROCEED TO SECTION 2.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

SECTION 2

- 1) TRANSFER THE DATA FILES STORED ON THE HARD DISK TO TAPE.
- 2) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF THE TRANSFER WAS SUCCESSFUL, PROCEED TO STEP 5 OF THIS FORM.

IF THE TRANSFER WAS UNSUCCESSFUL, VERIFY THAT THE PROPER SEQUENCE OF STEPS WAS PERFORMED TO TRANSFER DATA FROM ONE MEDIA TO ANOTHER. CHECK CASSETTE TO VERIFY THAT THE "SAFE" SWITCH IS IN THE OFF POSITION, AND PROCEED TO STEP 3 OF THIS FORM.

- 3) PERFORM "DATA FILE TRANSFER" SEQUENCE AGAIN.
- 4) VERIFY THAT DATA FILES ARE ON THE TAPE.

IF TRANSFER WAS SUCCESSFUL, NOTE IN THE SPACE BELOW WHAT WAS DONE TO CORRECT THE PROBLEM, PROCEED TO STEP 5 OF THIS FORM.

IF NO, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

CORRECTIVE	ACTION(S)	 	 	

PAGE 4 FORM M

5)	TRANSFER DATA FILES FROM TAPE BACK TO HARD DISK AND VERIFY DATA FILES WERE SUCCESSFUL TRANSFERRED.
	IF YES, PROCEED TO STEP 6 OF THIS FORM.
	IF NO, PROCEED WITH STEPS 3 AND 4 OF THIS SECTION AGAIN, THIS TIME CONCERNING DATA FILE TRANSFER FROM TAPE TO DISK.
	CORRECTIVE ACTION(S)
6)	PERFORM STEPS 6 THROUGH 9 OF SECTION 1 OF THIS FORM. MAKE COMMENTS CONCERNING DEVIATIONS DURING EXECUTION OF THE ABOVE SET OF INSTRUCTIONS IN THE SPACE BELOW.
	COMMENTS
•	
7)	COMPARE THE HARD COPIES OBTAINED FROM SECTION 1 OF THIS FORM AGAINST THE HARD COPIES OBTAINED FROM SECTION 2 OF THIS FORM
8)	WERE THE AMPLITUDE RESPONSES ON THE A AND C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN AMPLITUDE RESPONSE

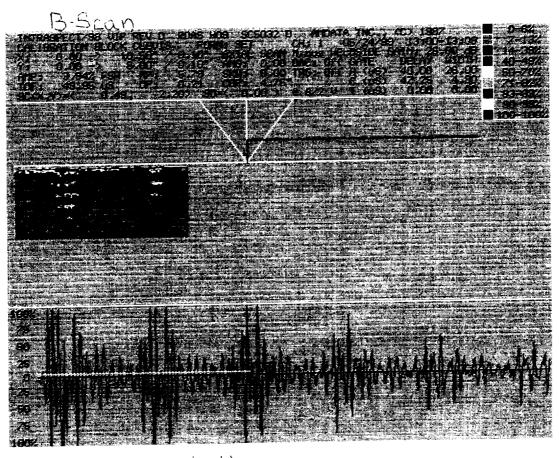
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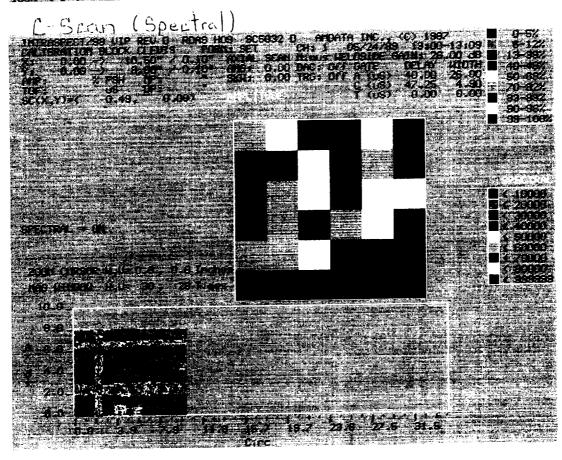
9)	WERE THE PHASE RESPONSES ON THE A-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN PHASE RESPONSE
10)	WERE THE FREQUENCY RESPONSES ON THE B, C, SPECTRAL C-SCANS THE SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IS SPACE BELOW.
	DIFFERENCES IN FREQUENCY RESPONSE
11)	WERE THE COLOR SCALES AND DISPLAY CLARITY SAME?
	CIRCLE ONE: YES NO
	IF NO, MAKE COMMENTS NOTING DIFFERENCES IN SPACE BELOW.
	DIFFERENCES IN COLOR SCALE AND DISPLAY CLARITY

***NOTE: IF THE HARD COPIES OBTAINED FROM SECTION 1 DO NOT MATCH THE HARD COPIES FROM SECTION 2, THERE WAS A COMPROMISE IN DATA FILE INTEGRITY DURING TRANSFER. ASSEMBLE ALL HARD COPIES TOGETHER, ATTACH TO THIS FORM, COMPLETE A PROBLEM/FAILURE REPORT, FORM N, AND NOTIFY MTI ELECTRONIC MAINTENANCE.

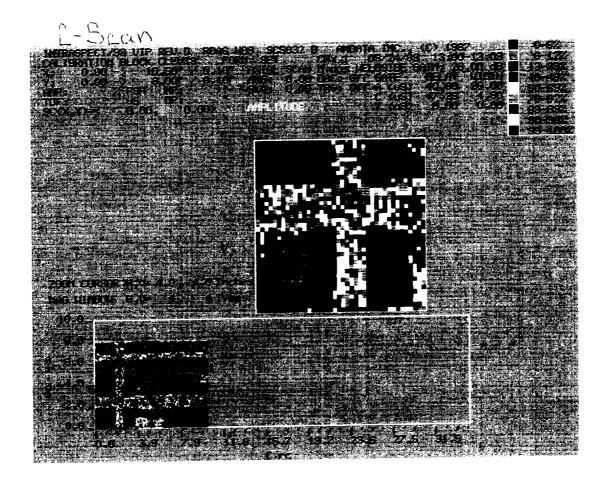
Data File Integrity

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Data File Integrity

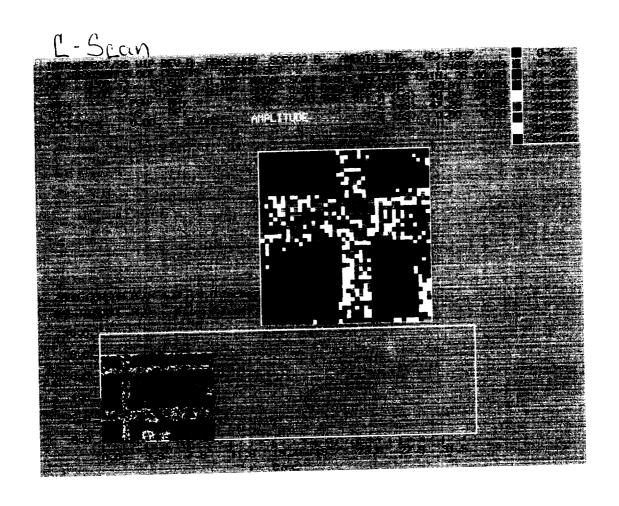


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Data File Integrity (From data tape)

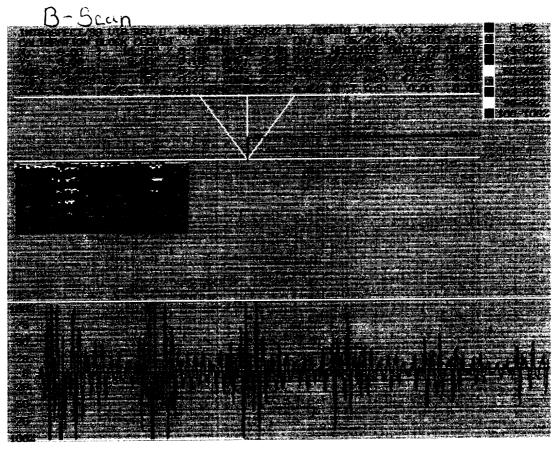


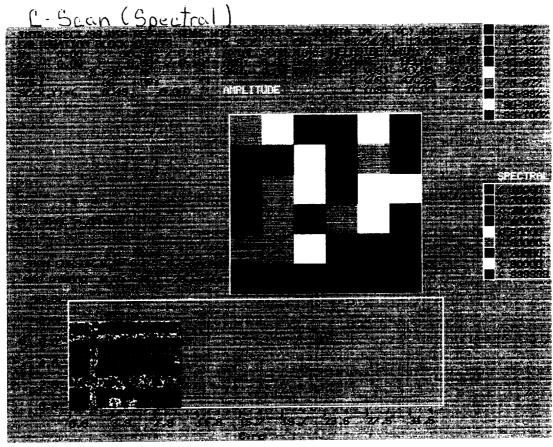
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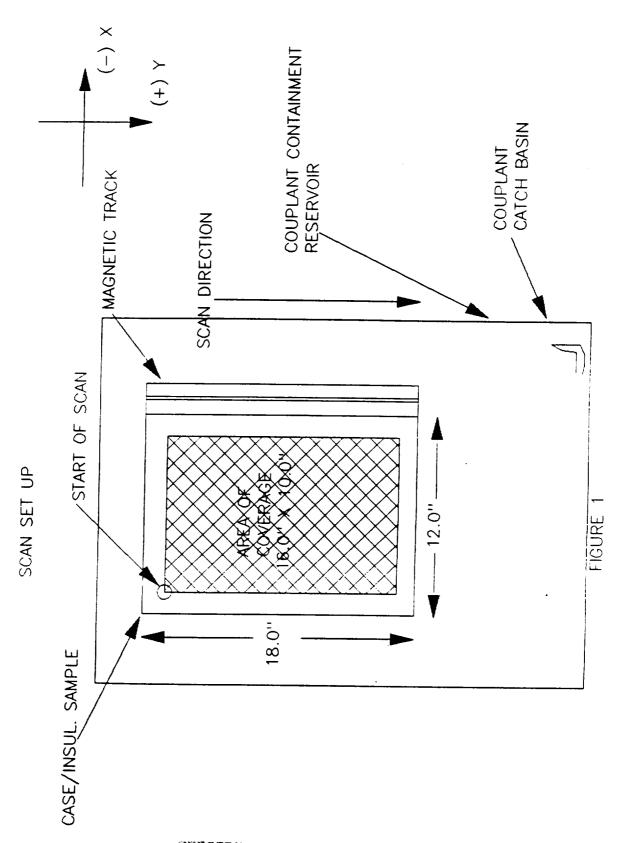
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Data File Integrity (From Data Tape)





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